

MARINE REVIEW.

VOL. XIII.

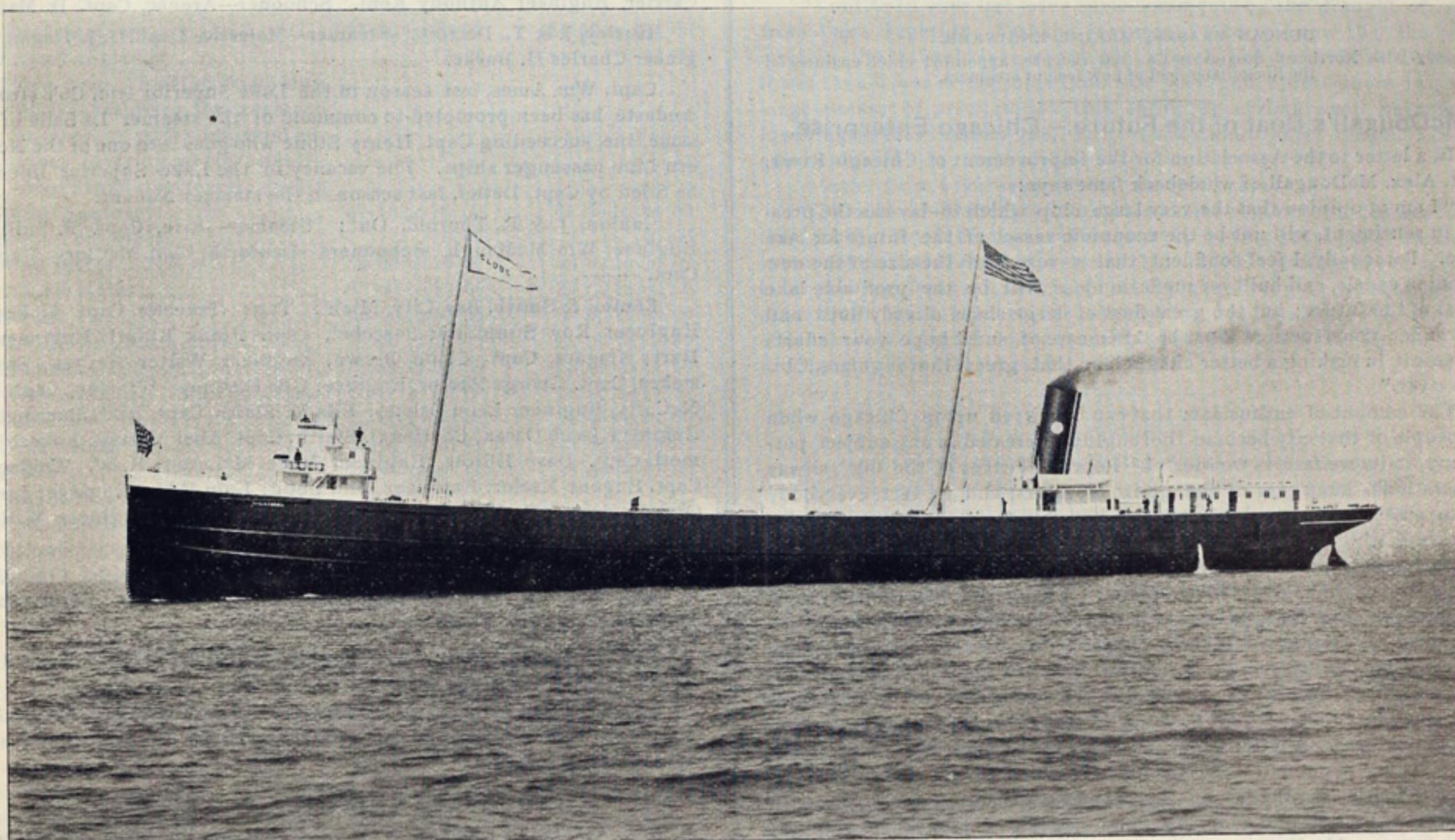
CLEVELAND, O., MARCH 26, 1896.

No. 13.

Establishment of Ore Prices.

The announcement that \$4 a ton had been agreed upon as the base price by producers of Bessemer ore in the Lake Superior region was not a surprise to vessel owners. Although leading members of the association of ore dealers have been holding meetings in Cleveland at different times during three months past, and have been so busy as to make the sessions continuous for a week at a time, it has been quite generally understood that their work has had reference to relative prices of the various ores and to allotments for the different mines, and that they would finally announce the base price at about \$4. The price fixed on the product of the big Norrie mine, Gogebic range, is, as usual, made the basis upon which all other prices are arranged. At \$4 Norrie ore is now offered at \$1.10 a ton higher than the price at which it sold a year ago, and the advance in all other Bessemer ores is about in the same proportion. Mesabi Bessemers of the same contents as Norrie in iron and phosphorus will sell for \$3.45. Franklin, one of the special ores of the Mesabi, will sell for \$3.75, and among prices on other high grade ores are \$4.50 for Minnesota and \$4.25 for Chandler. But it is not necessary to give prices

This statement of ore prices is, of course, an important step in the direction of closing up lake freights and all other matters pertaining to the ore business for the coming season, but the question arises, How will the furnace interests take to an advance of \$1.10 over prices which they paid for ore last year? Will they come into the market and buy shortly, or will they enter a vigorous protest against the advance and refuse to make purchases until they are absolutely compelled to do so? Ore dealers seem to think that the new prices will be paid without great opposition. They are of the opinion that the firm stand which they have taken will, just as it did a year ago, tend to strengthen the entire situation in the iron industry. They have the strongest kind of an organization, and it would certainly be to the advantage of all interests to have success attend their efforts in this matter of raising values. They may be forced to go ahead moving ore upon the opening of navigation without making sales, but they have the advantage of knowing that their production is to be limited and that lower lake docks will not, as in the past, be crowded with stocks of ore far in excess of what will be required for the year to come. All things considered, they have the advantage of the



LAKE FREIGHT STEAMER GLOBE.

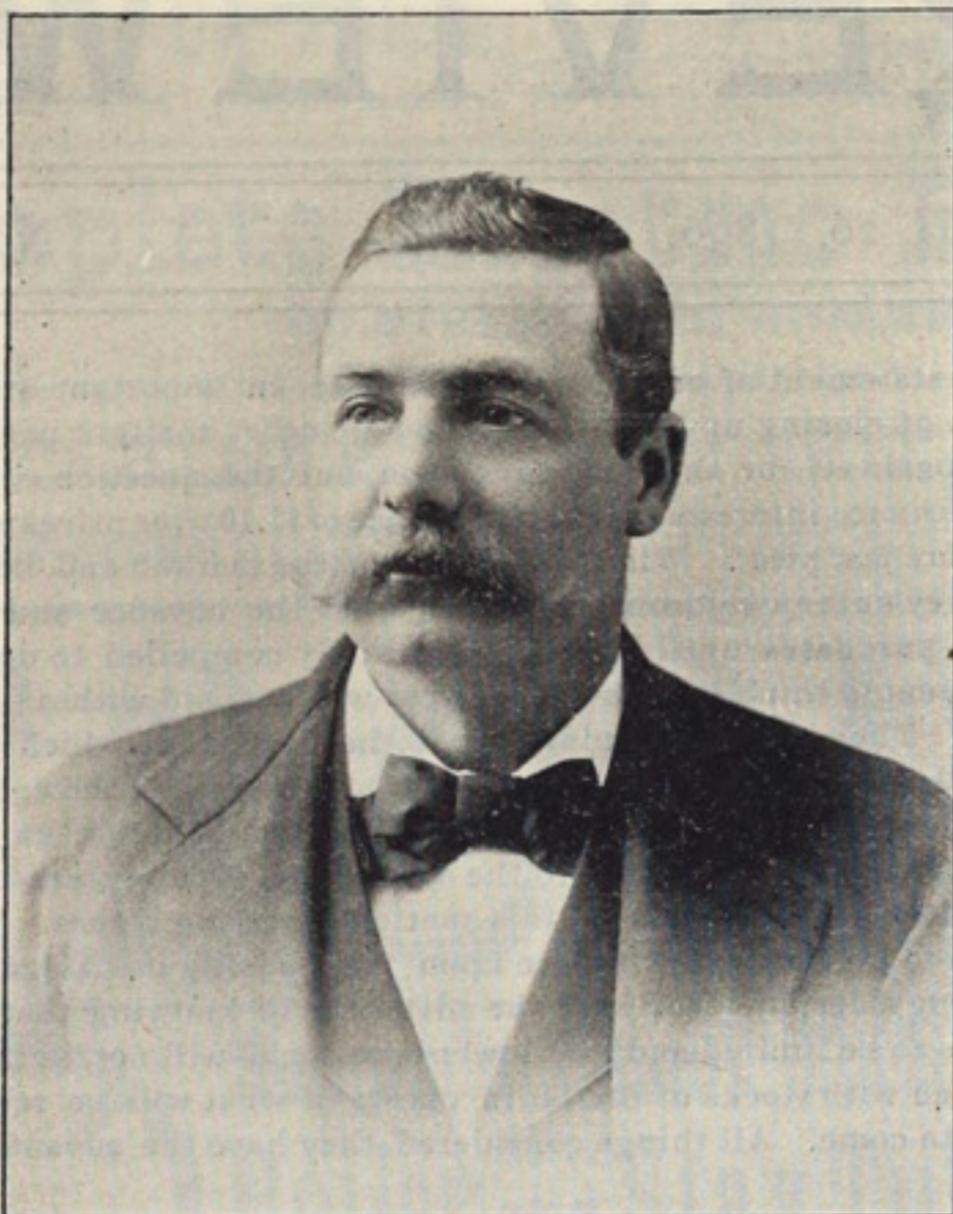
(Built by Globe Iron Works Co., Cleveland, and sold recently to John Gordon of Buffalo for \$185,000.)

in detail. It is enough to say that the entire range of values is based on the advance of \$1.10 a ton in the price of Norrie.

It is probable that prices would have been announced by the ore dealers some time ago but for a reduction in the demand for iron and steel since January, which has resulted in more ore being carried over at this time than it was expected would be now on the docks. The association some time ago agreed upon an output of 9,500,000 tons of Bessemer, but in view of less favorable conditions in the iron market, a cut of 20 to 25 per cent. has been made in the apportionment of the various mines, and the output of Bessemer is accordingly reduced to about 7,500,000 tons. This action does not mean, however, that this will be all the Bessemer ore produced; neither does it mean that 7,500,000 has been fixed as the entire output of ore. This Bessemer limit of production may be increased later, if the market warrants an increase, and there is of course a big output of non-Bessemer ores that has not as yet been passed upon by the association. It may be noted, however, that the association now has under consideration the matter of dealing with non-Bessemer ores just as they have with the Bessemer product.

situation if their combination proves as strong as is expected. They offer \$1 on season lake freight contracts from the head of Lake Superior, and in this they are taking little chance, even as regards unsold ore, as it is not at all probable that the ruling lake freight can go much below \$1. The vessel owner would be in a better position to secure more than \$1 lake freight if ore sales should be made before the opening of navigation at the advanced prices. If the great bulk of the ore is not sold before the opening of navigation, it would seem that the best policy for the vessel owner would be to wait with the ore dealer until sales are made. As there is no hope for any improvement in the draft of water from Lake Superior next season, and as handling charges as well as labor and other important items will be higher, there is a general disposition among vessel owners to refuse the dollar rate.

Mathematical calculations show that an iron ship weighs 27 per cent. less than a wooden one, and will carry 115 tons of cargo for every 100 tons carried by a wooden ship of the same dimensions, and both loaded to the same draught of water.



DUNCAN FRASER, MARINE ENGINEER.

Formerly with Northern Steamship Co., but recently appointed chief engineer of the Rockefeller fleet of new freight steamers.

McDougall's Boat of the Future.—Chicago Enterprise.

In a letter to the Association for the Improvement of Chicago River, Capt. Alex. McDougall of whaleback fame says:

"I am of opinion that the very large ship which to-day has the prestige in sentiment, will not be the economic vessel of the future for lake trade. Personally, I feel confident that a vessel of the size of the new Canadian canals, and built on modern ideas, will be the profitable lake vessel of the future; but the great fleet of large ships already built and now under construction must be taken care of, and I hope your efforts will result in making a better channel in that great thoroughfare, Chicago river."

The amount of enthusiasm that can be stirred up in Chicago when the people of that city become thoroughly interested in any subject pertaining to its welfare is wonderful. Representatives of the big railway corporations, managers of the grain elevators, and in fact everybody having any interest in river property has joined in the movement for improving Chicago river since Major Marshall, the United States engineer, suggested that the government abandon the old harbor and direct its attention to improving the Calumet. Among the representatives of big interests who have been aroused by Major Marshall's recommendation may be mentioned Marvin Houghitt, president of the Chicago & Northwestern Railway; W. G. Purdy, vice president of the Chicago, Rock Island & Pacific; C. H. Chappel, vice-president of the Chicago, Milwaukee & St. Paul; John F. Tracy of the Deering Harvester Works, and many others. A letter from Mr. Tracy to the association is a sample of the strong argument that is being presented to the government by these influential gentlemen on the scheme of dredging the river to 16 feet draft at present and adopting a plan whereby 20 feet can be obtained in the future. Mr. Tracy says:

"I presume that we are to regard the improvement of the river absolutely as a business proposition, and regard the river simply as an avenue of commerce, and as such the Chicago river is second to none in the world. We are safe to assume that we pay, either directly or indirectly, nearly 5 per cent. of the gross revenues of the United States government, and aside from the commercial interests, as a tax-paying community alone, we are entitled to a respectful hearing before the river and harbor committee of congress. For this community of two millions of people the Chicago river is the chief and cheapest avenue of commerce. When I tell you what bearing the Chicago river has on our factories I presume it will be a revelation to you. According to the census of 1890 there were nearly 10,000 factories in the city of Chicago. Why are they here? There is no fuel for them here. There are no raw materials for them here? Why are they here? Simply because of the excellent transportation facilities this city affords, and you know that outside cities have been endeavoring to entice them away by free sites and free taxes, but in spite of all these transactions in the decade from 1880 to 1890 the manufacturing interests in the city of Chicago increased 320 per cent., while the population increased but 118 per cent. And I think I am safe in estimating that in the last six years the same ratio kept up, and if so we now have 15,000

factories, and my friend, Mr. Rising, tells me his solicitor, the solicitor of the Chicago, Milwaukee & St. Paul Railway, says they have on their list 5,000 factories for this line of railway alone. And do you know that these factories, if this same ratio kept up, have an investment in their plants of \$600,000,000. If they have increased in the last six years as they have before, they would reach the annual output of a billion of dollars, and would employ about 400,000 men. Why are these factories here? Because of the excellent transportation facilities of this city. What put these facilities here? It has been the fact that every line of transportation in this city has one of its principal terminals here, and to a great extent the river brought them here, and Chicago has become the greatest center in the world for the exchange of freights between carriers. We have leaving this city and arriving here nearly 500 freight trains daily and 10,000 ships a year, and that means a facility for practically reaching almost every principal town of the American continent, and give them an opportunity to deliver their merchandise. That is the reason that the factories are here. Where are the factories? Around the terminals of these railroads and on the river. What does it mean to remove our river commerce twelve miles distant? It means that that which has chiefly brought these 15,000 manufacturing institutions is sacrificed, and they are depreciated in value, if not utterly ruined."

Appointments of Masters and Engineers.

McLaren & Sprague, Toledo, O.: Steamer—S. C. Baldwin, Capt. J. Madigan, Engineer Joseph Hall. Schooners—A. A. Carpenter, Capt. Walter Fullman; Myron Butman, Capt. Oliver Lavoe

Sinclair, Alex R., Duluth, Minn: Steamer—S. Langell, Capt. David Carrier, Engineer Anthony Reni. Schooner—Arena, Capt. D. Manuel

Hurley, J. & T., Detroit. Steamer—Majestic, Capt. H. J. Hagan, Engineer Charles H. Burke.

Capt. Wm. Ames, last season in the Lake Superior Iron Co's steamer Andaste has been promoted to command of the steamer La Salle of the same line, succeeding Capt. Henry Stone who goes into one of the Northern Line passenger ships. The vacancy in the Lake Superior line is to be filled by Capt. Detlef, last season in the steamer Nahant.

Conlon, J. & T., Thorold, Ont.: Steamer—Erie, Capt. P. Sullivan, Engineer Wm. McMaugh. Schooners—Danforth, Capt. McClory; Maggie, Capt. —.

Boutell & Smith, Bay City, Mich.: Tugs—Traveler, Capt. Al Forest, Engineer Roy Simpkins; Boscobel, Capt. Frank Elliott, Engineer Jay Hart; Niagara, Capt. Claud Brown, Engineer Walter McCrea; Sweepstakes, Capt. George Phelps, Engineer Gus Gartung; Winslow, Capt. Dan McCarty, Engineer Leon Seleno; Ella M. Smith, Capt. Riley Burrinton; Engineer Jacob Oscar; Charles O. Smith, Capt. Abel Vozine; Robert Emmett, Capt. Dave Elliott, Engineer Mike McLaren; R. W. Weideman, Capt. Eugene Keeler, Engineer John Fetig; Lulu Eddy, Engineer Joseph Grandmaison; E. M. Pierce, Capt. Edward Short, Engineer William Truscott.

McLean & Bridges, Bay City, Mich.: Steamers—Maine, Capt. Geo. W. Case, Engineer James Wellman; A. A. Turner, Capt. W. H. Scott, Engineer George Hopkins.

Myles, Thomas Sons, Hamilton, Ont.: Steamer—Myles, Capt. Geo. Mackey, Engineer James Smeaton.

Ralph, P. J. & Co., Detroit: Steamers—S. J. Macy, Capt. M. W. Gotham, Engineer W. F. Gregory. Schooner—Mabel Wilson, Capt. Jas. E. Gotham.

Association of Masters and Pilots.

B. F. Perkins of Camden, N. J., representing the American Association of Masters and Pilots of Steam Vessels, is at the Wedell House, Cleveland. Mr. Perkins' office in this organization is that of grand captain's clerk, and his entire time is devoted to the organization. The local branches of the organization, which is very strong on the coast are called harbors. Mr. Perkins established a harbor of 100 members in Buffalo. A large portion of the Buffalo members are pilots, or mates as they are called on the lakes, but some of them are captains. If it were not for the strength of the Ship Master's Association on the lakes, it is quite probable that captains generally would be favorably disposed to membership in the American Association of Masters and Pilots, as its aims are about the same as those of the shipmasters, and its national character is something of an advantage. The organization has a membership of something more than 4,000 throughout the country. A national body, made up of representatives from the various harbors, meets in Washington annually and deals with legislative matters affecting the interests of masters and pilots of steam vessels. An assessment life insurance of 25 cents per capita is now compulsory with all members joining the organization. Mr. Perkins is well versed in all matters pertaining to the association, and he hopes to establish harbors at various ports on the lakes other than Chicago and Saugatuck, where local branches have been in operation for some time past.

Advanced Schedule of Wages.

A general advance of $12\frac{1}{2}$ per cent. over wages of a year ago has been made by the Lake Carriers' Association in the schedule that is to take effect upon the opening of navigation. A meeting at which wages were fixed was held in Cleveland, Tuesday, and President J. J. H. Brown, as well as Secretary Keep of Buffalo, were present. Officers of the association will receive practically the same salaries that they received, but it was decided to pay Harvey D. Goulder, counsel of the association, \$1,500 for extra services rendered during the past winter in the matter of the Detroit river bridge and other legislative affairs that have required of him a great deal more time than in previous years. The new schedule, compared with that of a year ago, is as follows:

WAGES SCHEDULE—THE LAKE CARRIERS' ASSOCIATION.		
ON STEAMERS—	April, 1895. Per Month.	April, 1896. Per Month.
First class. Metal steamers having water bottoms and triple expansion engines.		
Chief engineer.....	\$100 00	\$112 50
Second engineer.....	70 00	79 00
Second class. Metal steamers not included in first class and wooden vessels with triple expansion and with compound engines, except the smaller boats which may be put in the third class.		
Chief engineer.....	\$75 00 to 90 00	\$84 00 to 101 00
Second engineer.....	60 00	67 50
Third class. Smaller boats with high pressure or low pressure engines, or with compound engines, covering all boats not included in the two former classes		
Chief Engineer.....	60 00 to 75 00	67 50 to 84 00
Second engineer.....	50 00	56 00
First mates.....	50 00 to 70 00	56 00 to 79 00
Second mates.....	35 00 to 50 00	39 00 to 56 00
Cooks.....	35 00 to 50 00	39 00 to 56 00
Helpers to cooks.....	10 00 to 15 00	11 00 to 17 00
Firemen.....	25 00 to 30 00	28 00 to 34 00
Wheelsmen.....	25 00 to 30 00	28 00 to 34 00
Lookouts.....	20 00 to 30 00	22 50 to 34 00
Deck hands.....	12 00 to 15 00	13 50 to 17 00
Oilers.....	25 00 to 30 00	28 00 to 34 00
ON CONSORTS AND SAIL—		
First mates.....	30 00 to 45 00	34 00 to 51 00
Second mates.....	25 00 to 35 00	28 00 to 39 00
Cooks.....	25 00 to 30 00	28 00 to 34 00
Seamen	25 00 to 30 00	28 00 to 34 00
Boys.....	12 00 to 15 00	13 50 to 17 00

It was decided to establish a shipping office at Milwaukee. The list of shipping masters for the coming season is as follows: Cleveland, A. R. Rumsey, and Charles Fisher assistant; Chicago, J. W. Hansom, and M. P. Felt assistant; South Chicago, A. W. Watson; Buffalo, Wm. Fletcher; Milwaukee, Capt. Lennon; Toledo, P. Mitchell; Ashtabula, Geo. Brooks. A committee appointed to look after shipping offices for the coming season consists of H. A. Hawgood, M. A. Bradley, Capt. Wm. S. Mack, Capt. Thomas Wilson and James Corrigan, all of Cleveland.

President J. J. H. Brown and Secretary Keep, who go to Washington specially to look after the Detroit river bridge bill, will take up with the several government departments a number of matters that have been hanging fire for some time past, notably the raft towing regulations and the appointment of a deputy collector of customs at the Mesabi ore dock, Duluth. Capt. Geo. P. McKay and Capt. Wm. S. Mack were instructed to visit Detroit and Amherstburg for the purpose of consulting with government engineers and others who will have to do with the lighting and staking of channels at Grosse point and the mouth of the Detroit river.

Changes in Lights, Fog Signals, Etc.

Characteristics of steam whistles on all three of the light-vessels in the Straits of Macinac will be changed on the opening of navigation. Changes in two of them were noted last week and now it is announced that the whistle on Gray's reef vessel will be changed to sound two blasts of one second each, followed by a silent interval of twenty seconds, and one blast of three seconds, followed by a silent interval of fifteen seconds' duration. A change is also announced in the Whitefish point light, Lake Superior. The light from this station will be a brilliant white flash every five seconds.

Notices explaining fully the lights to be used in connection with Sandusky bay strait channel have been issued by the light-house board.

Copies of these notices may be had from the light-house board, Washington, D. C., or from the United States engineer office, Cleveland.

On the opening of navigation a fixed white lens-lantern light will be established in the structure recently erected on the west side of the main channel of the Detroit river, on Grassy island fishery, about 1,300 feet due south from the present Grassy island light. With Grassy island light as a rear light, this light will mark a range line for running the main channel of the Detroit river from the Grosse Isle north channel range line to the Mamajuda range line. The point of intersection with the Grosse Isle north channel range line is east of Mamajuda range rear light and about 350 feet to the eastward of the 18-foot contour on the west side of the channel. The point of intersection with the Mamajuda range line is a little more than seven-eights of a mile to northward of the Mamajuda range front light.

The light-tower at Genesee light-station, entrance to Charlotte harbor, Lake Ontario, will, before the opening of navigation, be moved 350 feet northerly, to a point on the pier about 30 feet from its outer end, and the fog signal building will be moved about 840 feet, to a point just to the southward of the tower.

Notes Regarding Probable Draft of Water.

A telegram in the last issue of the REVIEW from the United States engineer office at Sault Ste. Marie, indicating that there will be no more water at the canal on the opening than there was a year ago, has attracted considerable attention. W. A. Livingstone of Detroit says:

"I notice in your last issue some comments on the draught of water from Lake Superior. Perhaps you would like to know that the water level in the Detroit river for the past month has been about 11 inches lower than it was at the same time last year, and unless there is a very large amount of precipitation this spring we certainly will have much lower water this summer than last. This should affect freight rates to some extent."

A letter from a correspondent at the Sault says:

"Thus far in March the thermometer has registered 6 degrees lower than during March of any previous year for twenty years past, and unless we have a radical change of weather there is little probability of navigation opening before April 25. John Heckler, dredging contractor, who came to the Sault from the encampment a few days ago, says that the water there is 8 inches lower than it was at this time a year ago, but this may be caused in part by an ice jam."

In General.

A recent speed run of the United States cruiser Olympia between two Chinese ports is officially reported to have averaged 20 knots an hour, and would have been 23 knots, her officers say, in smoother water. The Olympia ran under natural draught. Her headway was so great that the decks were swept by the waves, and it was necessary to slow down to avoid damage. As it was, some damage was done.

Within the last seven or eight years the German navy has increased considerably. On April 1, 1888, the fleet numbered seventy-nine vessels, and on April 1, 1895, ninety-one vessels, not including torpedo boats, of which there are more than 100. In 1888 the aggregate tonnage of the navy was 182,470 tons, while in 1895 it was 266,237 tons. In the former year the aggregate horse power was 182,470, while in the latter year it had reached 305,220.

Secretary Herbert of the navy department has directed a test, in the New York navy yard, of a machine designed to send a vessel through water without propellers. By burning oil a gas is generated which is allowed to enter a steam cylinder, where it is ignited by means of a spark, the force of this explosion driving the piston. A jet of air is blown out of the tubes in the stern of the vessel by the explosion and the resistance of the water causes the boat to forge ahead. The engineering experts say that the invention, which has been tried privately, has not given very good results, and they do not believe it will be useful for naval purposes. The inventor claims that it will be of service in the case of torpedo boats, and will drive them with phenomenal speed. The department desires to fit the apparatus to a 104-foot boat, but in deference to the wishes of the inventor a 28-foot boat will be used.

If Capt. James Davidson of West Bay City does not sell, this spring, any of the vessels which he now has built or building, he will have a fleet of twenty-one ships on the lakes during the coming season. Capt. Frank Welcome of Buffalo will be superintendent of this fleet. The first large steamer commanded by Capt. Welcome was the Siberia, and the berth was given to him by Capt. Davidson. When Capt. Welcome left the employ of the Northern Steamship Co. last summer Capt. Davidson again engaged his services and gave him command of the big wooden steamer Shenandoah. After laying up the steamer Shenandoah in Chicago last fall he was appointed first officer of the Davidson vessels.

Increased Facilities for Handling Ore.

About May 1 the Duluth, Missabe & Northern Railway Co. will have finished work on that part of the new iron ore dock at Duluth which is to be used during the coming season. The company will then be enabled to load at one time at its two docks eighteen vessels, each of 400 feet length. This means that facilities for loading ore at Duluth will be wonderfully increased during the coming season and the docks will be the best and largest of their kind in existence. The new dock will be on St. Louis bay, just opposite the old dock. The last of the piling for the new structure was driven a few days ago, and the work of raising the superstructure will now progress so rapidly that there is little doubt of its completion about May 1. Only one-half of the length of the new dock, 1,152 feet, will be completed this season. The approach to this new dock is 1,306 feet in length. The approach spans the tracks of two other railroad lines with iron girder bridges, 66 and 76 feet in length, respectively. In the approach there are 642 piles and 1,100,000 feet of timber. In the dock proper there are 3,980 piles and 4,000,000 feet of timber. There are also 400,000 feet of maple plank to be used in lining the ore pockets. The new structure will have 192 pockets, with a total capacity of about 38,400 tons, or about 175 tons per pocket. When the new dock is extended to a length equal to the companion dock it will have an equal number of pockets, 384, but the capacity per pocket will be about 25 tons greater. The height of the new dock is 58 feet, which is 4 feet more than the old dock, and in this manner a greater capacity per pocket is secured without

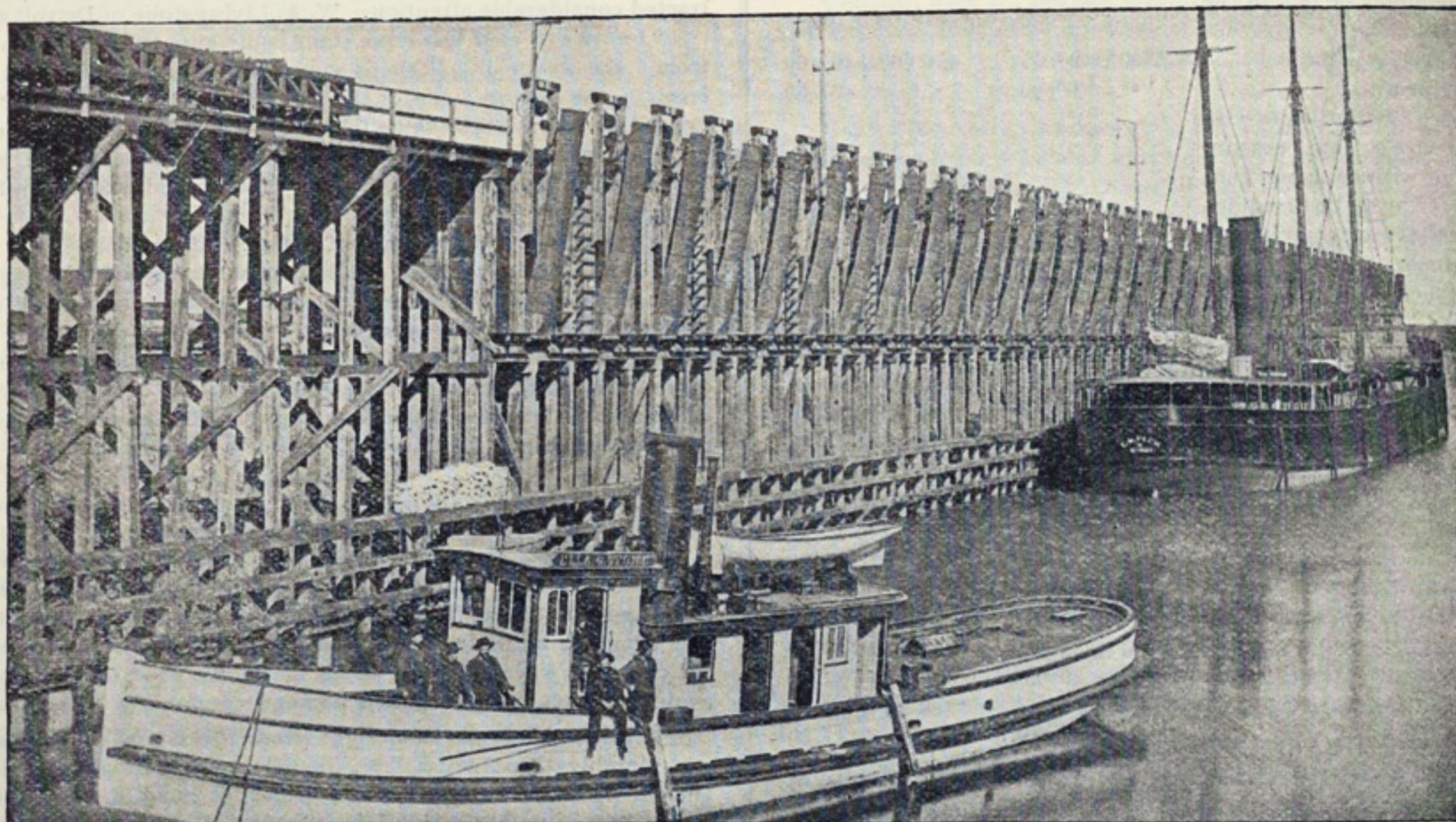
nearer 500,000 tons, although in 1887 a minimum was reached with an addition of 46,690 tons. Even when the carrying efficiency of the tonnage is considered, the balance-sheet for the year offers a prospect of less competition for the British ship owner.

Only one vessel of a total of 672 new vessels of 797,631 tons added to the register list during 1895 came from a foreign builder.

American Vessels For Canadian Coasting Trade.

Some of the grain shippers in the Canadian northwest have been discussing the question of opening the Canadian coasting trade to vessels of the United States, at least as far as Manitoba wheat is concerned. Their idea is to allow American vessels to carry wheat from Port Arthur and Fort William to Kingston and Prescott, and thus enable Montreal to secure a larger share of the Manitoba wheat trade in competition with New York and other American ports. They argue that on account of the ability of the great fleet of American vessels on the lakes to carry wheat down the lakes from the head of Lake Superior cheaper than the few Canadian vessels engaged in this trade, the grain has sought American ports for export. The advantage afforded a few Canadian vessel owners by the coasting laws in this regard, is, they claim, of far less importance than the matter of moving Manitoba wheat entirely within the dominion.

Joseph G. King of the firm of Marks, King & Co., Port Arthur, has prepared some statistics bearing upon this question. The total move-



ONE OF THE BIG LAKE SUPERIOR ORE SHIPPING DOCKS.

(From a photograph taken at Two Harbors, Minn.)

cutting down the number of pockets. The new dock, when extended to a length equal to the old one, will have a greater capacity by 15,400 tons. About 2,000,000 feet of coast fir timber is contained in the construction of the new dock. Machinery for raising and lowering the chutes will be of the Denton counterbalance hoist kind, similar to that in use in the old dock.

Shipping of the United Kingdom Nearly Thirteen Millions

According to the latest statistics of British shipping, prepared by Lloyds, there is owned in the United Kingdom 21,004 merchant vessels of 12,968,746 tons register. In nine years the increase has been about 3.2 million tons. The great tendency towards large steamers is reflected in the fact that although the number of steamers is under a third of the total number of vessels, the tonnage of these steamers makes up fully two-thirds of the aggregate gross measurement. Thus there are 8,379 steamers of 9.9 million tons. In fact, in ten years there has been an addition of over 3½ million tons of steamers, even after all allowance is made for sales, wrecks, and waste generally, while the sailing tonnage is actually less than it was ten years ago by 462,000 tons. During the past year, too, the decrease in sailing tonnage has been larger than for many years, 112,779 tons, while only 251,489 tons of steamers, numbering 116, were added on a balancing of the account, so that the net increase is 138,710 tons. This is the smallest addition to tonnage for ten years. In the preceding two years the increases were 351,739 and 281,928 tons respectively, but antecedent to 1892, the average for some years was

ment of Manitoba wheat by water during the season of 1895 was 12,210,309 bushels. Of the movement from Canadian ports, American vessels carried over four-tenths, or 4,606,686 bushels, to American ports, and Canadian vessels carried an additional small quantity to American ports, so that 4,700,623 bushels of Manitoba wheat went from Canadian ports to American ports for export. Of the whole quantity of Manitoba wheat shipped via Duluth, two-thirds, or 1,092,972 bushels, were carried by United States vessels, and only 591,455 by Canadian vessels. Thus of the whole quantity of Manitoba grain carried by water, amounting to 12,210,309 bushels, 5,699,658 bushels were carried by United States vessels, and probably all but a fraction of this amount went to United States ports to be shipped from New York and other ports to Great Britain, instead of from Montreal to Great Britain.

The British admiralty has authorized the adoption of oil fuel in the Gladiator, a cruiser the construction of which was recently begun at Portsmouth, England. The oil is to be carried in bulk and the tanks are to be built as feed tanks. The cruiser is to be 5,750 tons displacement and 10,000 horse power. Engineer-in-Chief Melville, of the bureau of engineering, United States navy, says that experiments which have been made under the direction of his bureau indicate that the Gladiator will be a failure with oil as fuel. With all due respect to Commodore Melville it may also be noted that he has given little attention to the Belleville water tube boiler, or in fact water tube boilers of any kind, although the British admiralty adopted the French boiler and is having remarkable success with it.

Another Letter from Peter La Champaign.

Capt. Frank Welcome of Buffalo sends the REVIEW another letter which he received recently from Peter La Champaign, the Canadian Frenchman of Algonac, Mich., who is still seeking a place on the passenger steamer North West. The letter follows without change of any kind:

ALGNACK, Feb. 4th 1896.

Coptin Frank Welcom, Buflo, Der Sur—i bin rite on you bout to weak a go an i bin go on pos ofis to tre tam evry day an i ant got letar yet but on sam tam i meet a fren an she ax me wat for i com on pos ofis so much den i tole her al bout it. i sa you no Frank Welcom an she was much surpris wen I say dat an she say she no you bout thirty year an maby you no her to twas coptin hi hame she bin sale tug on de raver bout fifsta year an she was good fren on al dem french mans wat liv on Algnack an coptin hi hame she tole me i mak big mistak wen i rite on you for job an i sa wats de cos for dat an she say dar was a tam wen al dem coptin she hire al of it on de bote but da bin git so hi tone now da make de honer hire evry body but on sam tam she say de coptin kin pay it hof wen she hant do wat she tole her den i ax hi fi de honer es to hi tone to pay dem mans an wimens an she say no cos she say som tam wen dem wimens he go on de bote to cook he insult de coptin an dat make her mad an she say you com on my room an i pay you hof for dat some tam dat hopen on de midle of de lack an de honer she cant be on dat plas Coptin hi she tole me yoo wil be glad wen we al go on yoor bote. i dint no wats de nam on you Bote wat you gone sale til hi he tole me. He say his nam was nor wes She say twas bes bote on de lack an i get axcite an i was so glad an i comens laf an hi she laf to cos she is good fren on me an sam tam she tole me she gone feal bad to see us al go way cos she say she gone be lonsum An i say to hi dont cry cos i go rite dis sumer on you. an wen i rite i ax Frank how she like al of it an on sam tam i go ax Frank fi you kin come wid all you famly an tak to tre trip on de Nor Wes an hi he laf an i kin se she was glad and she say Peter good by i mus go cos we bin talk long tam an he tole me to rite de feler wat hone de Nor Wes an i say yes an she shak my han an sam tam i kin se tear on her chek wat com from her eye i tel yoo Coptin hi hame was good fren on me.

Now coptin fi yoo wil rite on me an tole me wat dat felers nam is wat hone de nor wes an on wat plas she live i rite on her i was sory you was so hi tone you cant hire us i wish yoo kin chang yoo mine an tole me wen yoo rite dat de all of it kin com on de Nor Wes. Maby dat honer liv so fur is tak long tam to get letar from her so fi yoo kin hire me and de all of it we kin come nix weak. i mete my brudder law las nite and she tole me she hant got letur yet an she ax de pos Master on Swan Creak wats de cos for dat. An de pos Master she tole her fi she want get letur quick she mus get box an she tole me she gone getto of it. Well coptin i got big jok on my brudder law Constant Paridee dats her nam yoo no. She tole me she was down on Joe Bedores plas las weak an Joe she tole her boot big bote wat use go by her plas an his nam was Nor Wes an Constant tole Joe she was gone enginer on dat bote an Joe she ax her fi is got paper to go on bote lik dat an she say no an she ax Joe were she kin get paper like dat an she say she mus go on Port Huron der was to hinspector. fi she want paper for enginer she mus ack lik publican cos de hinspector wat giv paper to enginer is publican she wont have no trouble but the mans wat want paper for be coptin he mus ack lik demcrack cos dat hinspector is demcrack an wen dat hinspector he tak dat ofis Grover Cleveland she told her a publick ofis is publick trus an Joe say dant so. he sa cos a demcrack he got be strick. Now my broder law she feal kin scare an she ax me fi i will go on Port Huron wid her an i say yes she say she kin get pass for to on dat little bote wat run to Pt Huron; she say she got big quant on Sam Burnham dats de coptin on dat little bote. dot wil be big joke on my brudder law fi she cant get her paper. Well Coptin my wimens hes getten al his close redy an mine to. an he is so glad cos he is gone on that big bote an he say wat big site to see de Nor Wes gone true to sou-ese-ben an wen we pas Algnack we kin al com on deck an maybe we can see coptin hi hame stan on de dock an i tole Mary, dats de wimens wot i got, maby yoo let us tak spy glas to look on hi Well Coptin i hope you gone tole me quick dat fellers nam wat hone dat bote so i kin rite on her cos i want to go on de bote so quck i kin but on sam tam i be glad fi you tole me yoo gone hire us an tole us to come quick. dont forget to tole us on yoo letur wat car to tak cos we ant use to ride on car. Well Coptin i wil expect letur puty quick. Remember us al on your family an i hope yoo hant al got de crip we al ben hav it here but we al got tru now; well good by and rite so quick as yoo cant to Peter La Champaign

Algnack Michigan Stat

P S Joe Bedore jus com in an she look on my sholder an he se ho i rite an he ax me fi he kin rite fu word on you. Dats Joe he comens now—helo Frank hole boy how you ben get long i hant se yoo for long tame by gosh Frank i ben glad you gone tak Peter han her family on yoo bote cos Peter tole me fi he go on de bote he gone tole you to stop on my dock on Sou-ese-ben to by all de fish and gam wat you want an I gone show

Mary dats Peters wimens how to cook de duck an i tel yoo when she get on de bote he cant beat never. wel Frank how is al de boy i be glad wen i se de botes go by my plas agin de time he ben puty tuf dis winter i tel yoo Frank de time was so hard de mush rat was to poor to bild a house an day all gone way. i se by de peper dat you was in Washington dis winter did yoo se dat feler dar wat use make his han rite on de snow let me no in tam wen yoo come up i kin hav plenty fish an gam ready. good by Joe Bedore great fren on Peter La Champaign.

Opening and Closing of Navigation.

STATEMENTS GIVING DATES ON WHICH NAVIGATION OPENED AND CLOSED AT VARIOUS POINTS ON THE LAKES.

YEAR.	St. Mary's Falls Canal.		Duluth.	
	OPENED.	CLOSED.	OPENED.	CLOSED.
1885	May 6	Dec. 2	April 27	Nov. 29
1886	April 25	Dec. 4	May 7	Dec. 14
1887	May 1	Dec. 2	May 4	Dec. 28
1888	May 7	Dec. 4	May 11	Dec. 31
1889	April 15	Dec. 4	April 11	Dec. 4
1890	April 20	Dec. 3	April 16	Dec. 8
1891	April 17	Dec. 8	April 30	Dec. 7
1892	April 18	Dec. 6	April 20	Dec. 6
1893	April 29	Dec. 6	May 1	Dec. 8
1894	April 17	Dec. 6	April 18	Dec. 5
1895	April 25	Dec. 11	April 27	Dec. 10

YEAR.	Straits of Mackinaw.		Welland Canal.	
	OPENED.		OPENED.	CLOSED.
1885	May 5		May 7	Dec. 9
1886	April 21		April 19	Dec. 1
1887	April 17		May 4	Dec. 10
1888	May 4		April 23	Dec. 8
1889	Mar. 25		April 16	Dec. 1
1890	April 8		April 15	Dec. 10
1891	April 15		April 20	Dec. 16
1892	April 3		April 19	Dec. 12
1893	April 17		April 24	Dec. 11
1894	April 2		April 19	Dec. --
1895	April 11		April 20	Dec. 12

AT BUFFALO AND ERIE CANAL.

YEAR.	LAKE OPENED.	CANAL OPENED.	CANAL CLOSED.	NUMBER OF DAYS CANAL OPEN
1885	May 3	May 11	Dec. 1	204
1886	April 17	May 1	Dec. 1	214
1887	April 17	May 7	Dec. 1	207
1888	April 28	May 10	Dec. 3	207
1889	April 10	May 1	Dec. 1	214
1890	Mar. 31	April 28	Dec. 1	216
1891	April 12	May 5	Dec. 5	214
1892	April 7	May 1	Dec. 5	219
1893	April 15	May 3	Nov. 30	212
1894	April 1	May 1	Nov. 30	214
1895	April 16	May 3	Dec. 5	217

In the fifteen torpedo boats provided for by the naval appropriation bill now before congress the navy department will have an opportunity to try different kinds of boilers. It may be, therefore, that not only will the ordinary and coil boilers be used, but that machinery for using liquid fuel and gas will be tried. Although the bill provides that the four proposed battleships shall have a displacement of about 11,000 tons each and are to be supplied with machinery capable of producing 10,000 horse power, so as to give a speed of 15 knots, it is quite probable that Engineer-in-Chief Melville will try to have the secretary increase the horse power. In the engineer-in-chief's opinion this figure is too small to produce the speed of 15 knots desired and he and expert engineers have doubts that the Kearsarge and Kentucky, now building at Newport News, will be able to make the record the department is anxious to obtain. The boilers are to be of the double-ended cylindrical type, as those of the vessels under construction at Newport News, and the remainder of the machinery is to be similar to that with which the Kearsarge and Kentucky are to be supplied.

Numerous favorable comments on the passenger service of the Nickel Plate road have come to our notice. Their fast western express, leaving New York City at 6:00 p. m., Boston at 3:00 p. m., Buffalo at 5:35 a. m., Erie 8:07 a. m., Cleveland 10:53 a. m., and Ft. Wayne 4:10 p. m., arrives at Chicago at 9:00 p. m., affording fast time and splendid connections for all points west. Rates always the lowest.

20-Mar. 31.



DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

Published every Thursday at No. 516 Perry-Payne building, Cleveland, O
SUBSCRIPTION—\$2.00 per year in advance. Single copies 10 cents each. Convenient binders sent, post paid, 75 cents. Advertising rates on application.

The books of the United States treasury department on June 30, 1895, contained the names of 3,342 vessels, of 1,241,459.14 gross tons register in the lake trade. The number of steam vessels of 1,000 gross tons, and over that amount, on the lakes on June 30, 1894, was 359 and their aggregate gross tonnage 634,467.84; the number of vessels of this class owned in all other parts of the country on the same date was 316 and their tonnage 642,642.50, so that half of the best steamships in all the United States are owned on the lakes. The classification of the entire lake fleet on June 30, 1895, was as follows:

Class.	Number.	Gross Tonnage.
Steam vessels.....	1,755	857,735.00
Sailing vessels.....	1,100	300,642.00
Unrigged.....	487	83,082.00
Total.....	3,342	1,241,459.00

The gross registered tonnage of vessels built on the lakes during the past five years, according to the reports of the United States commissioner of navigation, is as follows:

Year ending June 30,	1891.....	204	Net Tonnage.
" " " 1892.....	169	45,168.98	
" " " 1893.....	175	99,271.24	
" " " 1894.....	106	41,984.61	
" " " 1895.....	93	36,353.00	
Total.....	747	334,634.28	

ST. MARY'S FALLS AND SUEZ CANAL TRAFFIC.
(From Official Reports of Canal Officers.)

	St. Mary's Falls Canal.			Suez Canal.		
	1895.*	1894.	1893.	1895.	1894.	1893.
No. vessel pass'ges	17,956	14,491	12,008	3,434	3,352	3,341
T'n'g, net registd	16,806,781	13,110,366	9,849,754	8,448,383	8,039,175	7,659,068
Days of Navigat'n	231	234	219	365	365	365

* 1895 figures include traffic of Canadian canal at Sault Ste. Marie, which was about 4½ per cent. of the whole, but largely in American vessels.

Entered at Cleveland Post Office as Second-class Mail Matter.

MEMBERS of congress who object to appropriations for river and harbor improvements might with advantage pay attention to a few notes regarding the Manchester ship-canal. The city of Manchester advanced \$25,000,000 for the completion of this canal and has not now, after the canal has been in operation more than two years, any prospect of getting a return in interest on this loan. Thus far the canal is a failure financially but there is a degree of satisfaction among the people of Manchester simply on account of the fact that the canal tonnage increased from 925,000 tons for the full year of 1894 to 1,358,000 tons for the year 1895. The tonnage of the St. Mary's Falls canal for a season of less than eight months in 1895 was more than ten times that of the Manchester waterway, and yet our government hesitates about making appropriations suitable to the requirements of this vast commerce.

VESSEL owners are, of course, very much interested in the meeting of lake underwriters now being held in Buffalo. It is quite probable that all details of the hull tariff will be fixed up today (Thursday) and it is probable also that a moderate advance will be made in rates, the principal change being 1 per cent. additional premium on steel hulls. The underwriters say that the liberal policy of last year has been abused to some extent, and they will insist upon more prompt notification of losses from owners. They are of the opinion, however, that vessel owners prefer a continuance of this policy, even if there is some advance in rates, and this will be made the principal excuse for any change that may be made in the direction of increased premiums.

ALTHOUGH reports of the meeting of the Lake Carriers' Association at which wages for the coming season were advanced 12½ per cent. contain no reference to petitions from the organized engineers, it is known that numerous petitions from engineers in all parts of the lakes have been prepared asking for an advance of 20 per cent. during the coming season. The engineers have also been informed, through their chief officers, that their petitions were presented to Secretary Keppel of the Lake Carriers' Association in Buffalo. The evident intention of the Lake Carriers' Association is to have it understood that the advance now made to all employees on their vessels is of a voluntary kind, and is made without reference to a demand from any class of employees.

IN THE annual report of the United States light-house board for 1895, just issued, there is an extended report by Prof. Lucien I. Blake, late superintending electrical engineer of the service, on the progress made in experiments looking to the use of sea telephones as a means of communication between light vessels and the shore. Prof. Blake's report covers the most extensive series of experiments ever undertaken in this regard. He is now with the University of Kansas but obtained leave of absence to do this work for the light house establishment.

WHILE THE Cramps and the Union Iron Works, two leading American ship building concerns, are figuring, by correspondence and otherwise, on getting some of Japan's new war ships to build in this country, it is understood that leading directors in one of the big English works, Sir W. G. Armstrong & Co., have gone to Japan with a view to gobbling up the greater part of this work by establishing a ship building yard in that country.

ALTHOUGH the REVIEW had no knowledge a week ago of the fact that P. M. Church of Sault Ste. Marie was the lowest bidder on the work of caring for St. Mary's river buoys, his service in this regard in the past was commended, and it is pleasing now to find that he has secured the contract, at a bid of \$2,795.

Suez Canal Traffic in 1895.

Again it is shown, by a full report to the state department from Frederick C. Penfield, agent and consul-general at Cairo, that not a single merchant vessel of the United States passed through the Suez canal during 1895. Only four American vessels passed through the canal during the year and they were warships and yachts. Although the number of ships passing through the canal in 1895 was eighteen less than for the preceding twelvemonth, the year 1895 was the most fruitful in receipts the canal company ever experienced. This is explained by the special traffic caused by the Chino-Japanese war and the Madagascar and Abyssinian campaigns. The falling off in tonnage receipts was more than made good by the tax on troops of Italy, France, Russia, and England, going or coming. As usual, Great Britain was the principal user of the great waterway, but it is a significant fact that, in 1895, she had sixty-four fewer vessels than in the previous year, while Germany—making a determined fight for trade in the Orient—had eighteen more; and it can not be assumed that the increase of French traffic (184 vessels in 1894 and 274 in 1895) was alone explained by military operations in Madagascar and the East. The detailed record of the traffic in 1895 follows:

NATIONALITY.	STEAMERS.	NET TONNAGE.	TRAFFIC RECEIPTS
American*	4	2,340.79	\$3,259
Austrian	72	166,426.74	298,456
British	2,330	6,087,302.56	11,105,484
Chinese	2	483.94	879
Danish	1	863.52	1,554
Dutch	188	355,637.22	655,267
French	274	664,388.00	1,121,726
German	312	690,259.98	1,262,079
Italian	78	146,161.24	284,755
Japanese	2	2,354.73	4,238
Norwegian	56	105,993.06	191,954
Portuguese	3	3,580.16	7,682
Russian	39	95,567.59	191,954
Spanish	33	87,157.04	181,727
Swedish	2	2,271.14	4,098
Turkish	35	34,204.72	106,288
Egyptian	3	3,253.40	10,348
Total	3,434	8,448,245.83	\$15,631,748

* Warships and yachts.

Manufacturers of Blake pumps, New York, are always alive to advantageous methods of advertising their pumps. In the first number of the Journal of the American Society of Naval Engineers for 1896 there was printed a paper giving an exhaustive report on the "Contract and Screw Trials of the U. S. S. Katahdin," by Passed Assistant Engineer F. C. Bieg, U.S.N. The Blake company has had this paper reprinted in pamphlet form, and with the addition of photographs directs attention to its pumps on the ship. Each condenser on the Katahdin has one combined air and circulating pump of the Blake type. This machine combines two vertical single acting air pumps, 25 inches in diameter and 12 inches stroke, and one horizontal double acting circulating pump, 31 inches in diameter and 18 inches stroke, all worked by a horizontal steam cylinder, 18 inches in diameter and 18 inches stroke, the circulating pump being worked direct and the air pumps by vibrating beams. Each circulating pump is capable of discharging 4,800 gallons of water per minute from the bilge, the openings for sea and bilge suction being 11 inches in diameter. The stop valves in these suction pipes are so connected by a locking device that when one is open the other is shut.

Around the Lakes.

Buffalo line boat managers have agreed to not start any of their vessels until April 15.

F. W. Wheeler of West Bay City has sold the lumber steamer St. Joseph to Buffalo parties for \$10,000.

Capt. David Clow, who sailed the lakes for nearly fifty years and was well known to pioneer Milwaukeeans, died on March 19, at Crystal Lake, Ill., aged 71 years.

It is expected that increased competition in the steamboat fueling business at Buffalo will hold down the cost of fuel to steamboat owners during the coming season.

Harris W. Baker and C. A. Chamberlain have purchased the tug Champion from the Grummond estate, Detroit, and will fit her out for heavy towing and wrecking.

Peter Olson of Manitou Island has been appointed keeper of the new life-saving station near Bailey's harbor. Capt. Olson has been a member of the life-saving crew on Manitou island ever since the station was established there.

At Bayfield, Wis., during the past winter, F. L. Maynard has been engaged in rebuilding the Booth Packing Co.'s tug G. W. Currie. She is now practically a new boat, as machinery and hull have both been entirely overhauled.

During the coming season the steamer Rube Richards will tow the barge H. W. Sage. The steamer Queen of the West is to tow the May Richards and the Kate Winslow. The J. S. Fay has been given the Warmington and the Sophia Minch.

Capt. Thomas Byrne of Sault Ste. Marie has sold the passenger steamer Ivanhoe to C. H. Newman of Chicago for \$14,000, accepting Chicago real estate as part payment. The Ivanhoe will next season be engaged in excursion business between Chicago and South Chicago.

The Canadian propeller Myles will next season be in the same route as last, Duluth to Montreal, carrying flour and grain down and general merchandise back to Fort William and Duluth. She has been replanked at Kingston during the winter from keel to covering board.

Senator McMillan has introduced in congress a bill to establish a life saving station at Port Huron, Mich. As the measure will be in the hands of the commerce committee of the senate, it will very probably be reported favorably without delay, Senator McMillan being member of that committee.

Mr. A. Osier, lake representative of DeGrauw Aymar & Co., New York, was in Cleveland Thursday on his way east. His firm has shipped a car load of anchors to F. W. Wheeler & Co., West Bay City, and among them were two anchors for the steamer Centurion, formerly fitted with another style of anchor.

Lake underwriters in session at Buffalo are engaged in the preparation of a schedule of insurance rates on hulls. It is understood that the companies represented by general agents on the lakes have again lost the insurance on both grain and flour business at the head of the lakes, the British & Foreign Co. having made rates on this business almost as low as the figures at which it was secured a year ago.

An advertisement found elsewhere in this issue from Major M. B. Adams, corps of engineers, U. S. A., Detroit, calls for bids for furnishing the boilers, machinery, etc., for twelve complete steam fog signals, in sets of two, and for six boilers with fittings. Another notice from the light-house engineer at New Orleans asks for bids on a boiler for the light-house tender Arbutus.

Within the coming week Capt. Daniel McLeod, manager of the Inland Lloyd's Register, will have distributed all of the books to insurance agents and others who are entitled to them. Reductions in ratings of some of the older classes of wooden boats will prove disappointing to some owners. Probably not more than half a dozen of the canal schooners have secured an A2 class.

For the year 1895 the Richelieu & Ontario Navigation Co., principal St. Lawrence river passenger line, reports gross receipts of \$689,468.46, and expenditures \$582,730.00, leaving a net profit of \$106,437.86. Out of this amount two dividends of 3 per cent. each have been declared, together amounting to \$81,000, the balance of \$25,437.86 being added to the surplus. Electric lights have been placed on all steamers running on the principal lines.

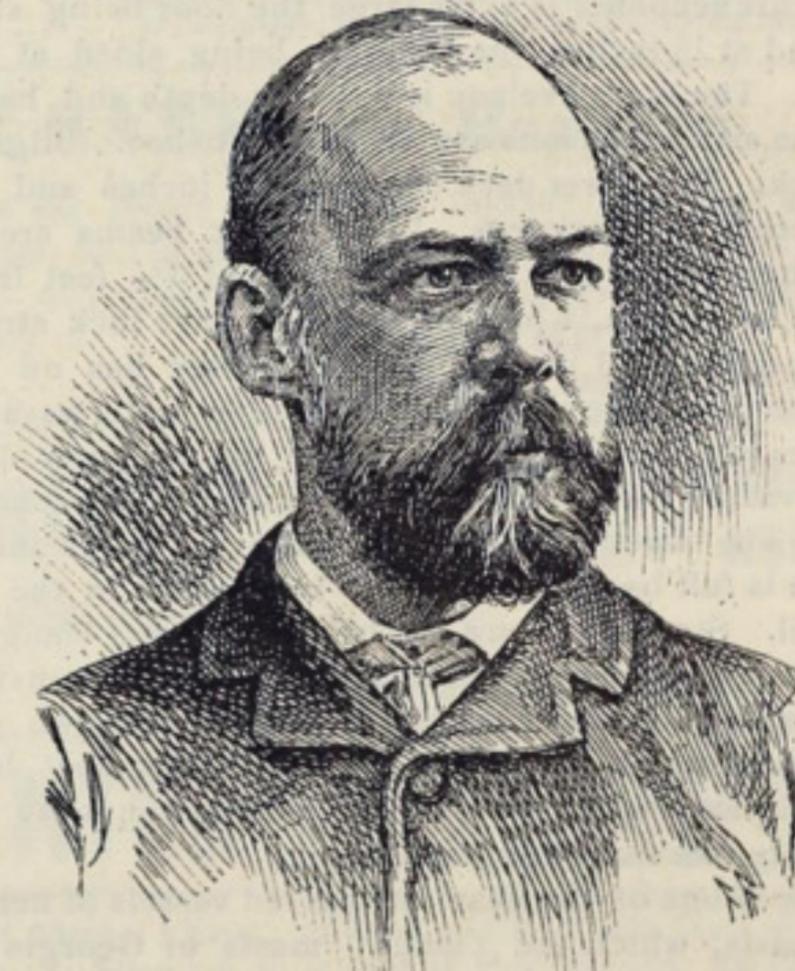
North Tonawanda, N. Y., is becoming more prominent as a receiving port for the Lake Superior ore. The Tonawanda Iron & Steel Co. have just completed another large blast furnace, and have added to their equipment another Brown hoist, which will enable them to unload during each twenty-four hours three of the average sized vessels which seek that trade. On one occasion last season they handled two 1,200-ton vessels during a day and night.

Officials of the Anchor Line, Buffalo, deny the statement that they are trying to sell off their wooden steamers. The steamer Gordon Camp-

bell, smallest of the fleet is for sale, and may not be put in commission upon the opening of navigation, but other wooden boats of the line are still suited to handling a large business and will be operated as usual. The tonnage of the whaleback steamer Frank Rockefeller, which is now nearing completion at West Superior, is 2,759.86 gross and 2,013.55 net, and her official number is 121,015. Tonnage of the Wilson line steamer W. D. Rees of Cleveland is 3,760.29 gross tons and 2,992.33 net, and her official number is 81,535.

Herman Kahlman, Jr., who is well known to vessel men on account of long connection with Detroit river improvement work, will resign his position on April 1 to take up business on his own account. Mr. Kahlman has always taken a great interest in vessel matters and has been a most obliging official while in charge of the river work. In 1880 he was superintending inspector on the Lime-Kiln crossing under Gen. Weitzel; in 1883 he was appointed inspector under Col. Farquhar, and for twelve years following he was under the direction of the late Gen. Poe, having charge of works at Black River, Port Huron, mouth of Black river, St. Clair river, Rouge river, St. Clair Flats, Ballard's reef, Lime-Kiln crossing and the mouth of the Detroit river. He was also engaged on a survey of Grosse point, a survey from Point Mouillee to Detroit, and a survey from Bar point to Sandwich, Ont. In all of this work Mr. Kahlman has met with approval from army officers of high rank by whom he has been engaged.

According to a schedule just announced by Gen. Pass. Agt. A. A. Heard, the Northern Steamship Co. will keep its promise and Buffalo will see little of the big passenger boats North West and North Land next summer. They will simply make a short stop at that port as they do at intermediate ports between the foot of Lake Erie and the head of Lake Superior. The boats will leave Buffalo west bound on Fridays and Tuesdays, at 8:30 p. m., arrive in Cleveland on Saturdays and Wednesdays at 7 a. m., leaving at 7:30 a. m.; Detroit, arrive Saturdays and Wednesdays at 2:30 p. m., leaving at 3 p. m.; Mackinaw island, Sundays and Thursdays, arrive 10 a. m., leaving at 10:30 a. m.; Sault Ste. Marie, Sundays and Thursdays, arrive 5:30 p. m., leaving at 7 p. m.; Duluth, Mondays and Fridays, arrive at 4:30 p. m. East-bound—Leave Duluth Saturdays and Tuesdays at 1:45 p. m.; Sault Ste. Marie, Sundays and Wednesdays, arrive 11:15 a. m., leaving 12:45 p. m.; Mackinaw island, Sundays and Wednesdays, arriving 7:30 p. m., leaving 8 p. m.; Detroit, Mondays and Thursday, arrive 3 p. m., leaving 3:30 p. m.; Cleveland, Mondays and Thursdays, arrive 10:30 p. m., leaving 12 midnight; Buffalo, Tuesdays and Fridays, arrive 11 a. m. Connections with the steamer Manitou at Mackinaw island will be announced later, as will also the dates that this service will be inaugurated, although present indications point to the opening about June 10.



THE LATE NAT W. PRATT, PRESIDENT OF
THE BABCOCK & WILCOX CO.

(See page 11, issue of March 19, 1896.)

Again the naval appropriation bill as reported from the house committee on naval affairs contains an item of \$7,500 for a model tank for testing models of hulls, to be erected on the grounds of the old naval observatory. It is to be hoped that this item will be retained in the bill. On account of the present condition of the treasury, appropriations for the beginning of work on new dry docks at Algiers, La., Mare Island, Cal., and Portsmouth, N. H., have been removed from the bill since it was first agreed to in committee.

Side-Wheel Steamer Shinnecock.

In most respects the numerous side-wheel steamers engaged in passenger service on the lakes are similar to steamers engaged in the same service on Long Island sound. The small engraving printed herewith gives the outlines of a vessel of this type launched a few days ago by the



Harlan & Hollingsworth Co., Wilmington, Del., for the Montauk Steamboat Co. of New York. The steamer was named Shinnecock. She is 238 feet long, 85 feet beam and 14 feet moulded depth. Her engines are of the inclined surface condensing type, taking steam from Scotch boilers at 130 pounds pressure. Wheels are of the feathering type with curved steel buckets. The vessel has eighty-three state rooms, and a large dining saloon and smoking room, as well as spacious cabins from which entrance is had to the state rooms.

Still Building Wooden Sailing Ships.

Ship builders of Maine still have faith in large wooden sailing vessels, and the launch of a ship of this kind is announced occasionally. None of them are larger than the big wooden tow barges built within the past two or three years at West Bay City for lake service, but a peculiar interest is attached to them on account of their great sail power, and from the fact that a description of one of them brings back to the vessel owner or vessel master many reminiscences of the days of clipper ships. At the ship yard of Nathaniel T. Palmer, Bath, a few days ago, there was launched a four-masted schooner which is larger than the Gov. Ames, built at Waldoboro, Me., in 1888. The vessel was named Wm. B. Palmer. She is what is termed a medium clipper, having a combination of speed and carrying capacity. Her dimensions are: Length 257 feet 2 inches; breadth 42 feet 1 inch; depth 20 feet 1 inch; gross tonnage 1805.73. Dimensions of the big schooner Gov. Ames are: Length 245 feet 6 inches; breadth 49 feet 6 inches; depth 21 feet 2 inches; gross tonnage 1778.77. The Ames is of the centerboard type while the Palmer is of the keel type. There were used in the construction of the Palmer 400 cubic tons of Maryland white oak timber and 650,000 feet of Georgia yellow pine, these materials being of selected quality.

Framing of this schooner is extra large, the floor being sided at 14 inches and molded at 15 inches, the buttocks being sided at 13 inches, tops at 11 inches. The main keelson is 6 feet in depth and has a width of 15 inches. The sister keelsons are 28 by 14 inches. Bilge keelsons are 13 inches thick. The lower deck clamps are 9 inches and the upper deck clamps 8 inches in thickness. Lower deck beams are what are termed double, there being only the small space of 3½ feet from center to center. These beams are 12 by 13 inches, and have lock strakes 9 by 14, locking over beam end 3 inches. The schooner has on her lower deck an innovation in marine architecture—double waterways—having a depth of 21 inches and 14 inches wide. There are 90 lower deck hanging knees in the vessel, each being 11 inches wide and 24 inches in depth at the "throat." The lower deck stanchions are 13 by 14 inches. The upper deck frame is full beamed, no carlins being used in the construction of the vessel. Stanchions are 10 by 13 inches. Hanging knees number 110 beneath the upper deck beams, and their dimensions are 9 and 10 inches in width and 19 inches thick. Beside the two decks, the schooner has a quarterdeck extending forward a few feet beyond the mainmast. The decks proper are built of selected quality of yellow pine, being entirely free from knots and sap.

This schooner is one of the heaviest spomed vessels of her rig afloat. The four lower masts, which are "made" masts of Georgia pine, are each 116 feet long, the diameter of the fore and spanker masts being 30 inches, and the main and mizzen 29 inches. The topmasts are each 56 feet long, the fore having a diameter of 20 inches at the cap, and the others 17 inches. The bowsprit is 32 feet long outside the knightheads, and is 30 by 30 inches diameter. The length of the jibboom is 82 feet, and the diameter at the bowsprit cap is 21 inches. The spanker boom is 82 feet long, exceeding by 6 feet, it is claimed, the longest spanker boom of any schooner afloat. Bow anchors have a combined weight of 11,300 pounds, and the chain cables are of the largest size. Under full sail the schooner will have a spread of canvas of 7,500 yards, the largest sail being the spanker, which will spread 1,000 yards of duck. The vessel will carry about 3,000 tons on 22½ feet draft and will cost complete about 70,000.

Stocks of Grain at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store at the principal points of accumulation on the lakes on March 21, 1896:

	Wheat, bushels.	Corn, bushels.
Chicago.....	18,937,000	5,538,000
Duluth.....	12,655,000	134,000
Milwaukee.....	418,000	2,000
Detroit.....	283,000	10,000
Toledo	669,000	845,000
Buffalo.....	1,430,000	88,000
Total.....	34,392,000	6,617,000

As compared with a week ago, the above figures show at the several points named a decrease of 2,000 bushels of wheat and an increase of 588,000 bushels of corn.

On March 21, there was afloat at Chicago 512,000 bushels of wheat, 5,939,000 bushels of corn and 903,000 bushels of oats; at Buffalo, 134,000 bushels of wheat, and 163,000 bushels of oats; at Duluth, 512,000 bushels of wheat, and at Milwaukee 176,000 bushels of wheat and 280,000 bushels of oats.

Trade Notes.

A wooden tug to cost \$18,900 will be built by Brown & Miller of Jersey City, N. J., for the Erie Railroad Co.

The Pennsylvania Railway Company has adopted Ward water tube boilers for a large ferry steamer now under construction.

Orders for ten boilers for ferry boats and yachts have been booked recently by the Almy Water Tube Boiler Co. of Providence, R. I.

Capt. J. W. Martin, superintendent of water lines of the Flint & Pere Marquette Railroad, Ludington, Mich., says in a letter to the Buffalo Forge Co., Buffalo, N. Y.: "The forced draft apparatus installed by you in our steamer No. 5 has given entire satisfaction. I can cheerfully recommend it to the consideration of anyone requiring forced draft."

J. B. Gamble of Buffalo, captain of the tug A. J. Holloway, says in a letter to H. G. Trout, maker of propeller wheels: "I have used four of your wheels on the tug Holloway, and they have proven very satisfactory. In making a run of thirteen miles, towing a sand scow, we save twenty minutes per trip with the scow light, and twenty five minutes per trip with the scow loaded, and we do this with less fuel than we used before. I can safely say that yours is the best wheel we have ever had on this tug."



SAULT RIVER STEAMER WAUPOOSE.

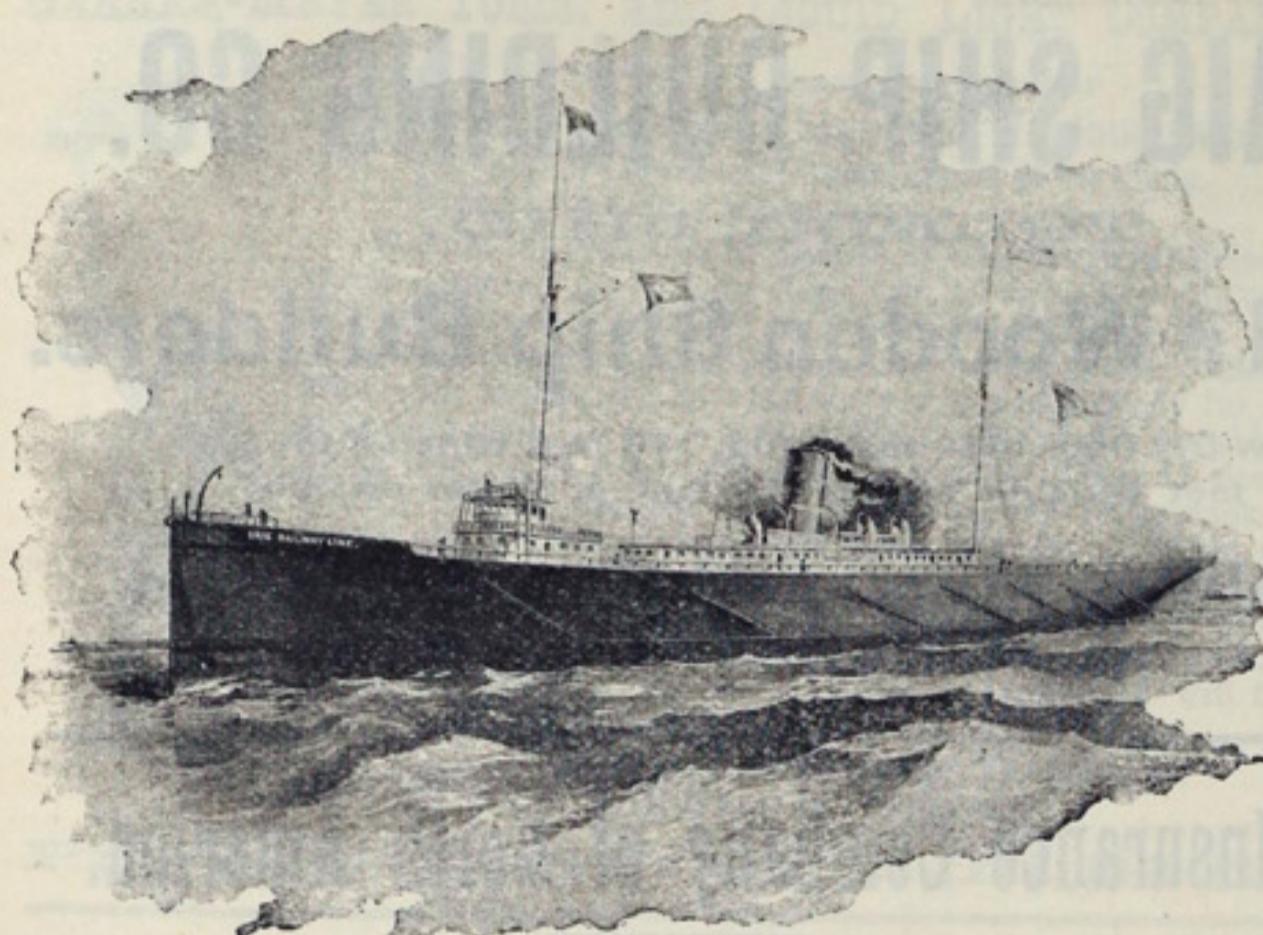
(To be used for vessel reporting purposes by Harvey's Marine Bureau.)

The following letter concerning Empire boiler compound, signed by Thomas Shehan, formerly chief engineer of the Mutual Transportation Co., will prove interesting: "I have tried numerous compounds without success, and was very sceptical of anything in that line. I put the Empire system on some boilers under my charge, and after a trial extending over ten weeks, I must say that I am more than pleased with the results. The material has removed the scale and a very bad oil film from the plates and tubes of the boilers and has thoroughly enameled the surface of the metal; no new scale has formed since the system has been applied. I consider this enamel the best point that I have ever seen in boiler cleaning, as it not only prevents the formation of scale, but stops all forms of corrosion. I believe it will greatly prolong the life of a boiler and stop a great many of the repairs so common to water tube boilers. The system is a most economical one, and one that recommends itself to a thoroughly posted boiler man."

Mr. Alex. C. Bates, No. 35 Wade Building, Cleveland, is agent for this compound.

Reduced rate tourist tickets to California points are now on sale by all agents of the Nickel Plate road. Our trains make excellent connections at Chicago with through trains to the coast.

22-Mar. 31.



Rapid Fueling Docks, DETROIT RIVER.

JAMES GRAHAM, Foot Twenty-first St., Detroit,
Below Routes of Passenger and Car
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Pockets and Chutes arranged for different types of vessels.

BEST STEAM COAL.

Large Supplies and every effort to give dispatch, day and night. Wide stretch of river for tows, and plenty of water at dock at all times.

NEW HYDROGRAPHIC OFFICE CHARTS.

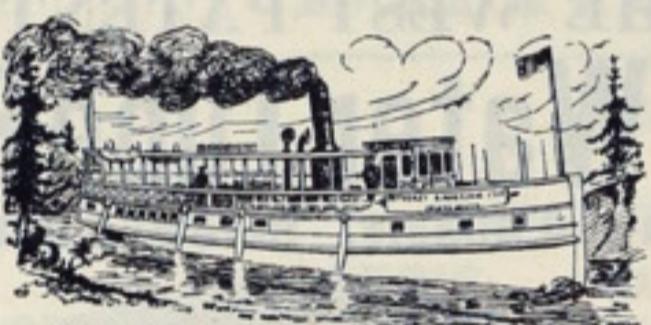
Including the Five Lakes on Four Charts.—New Charts of the Sault River, showing the new Hay Lake Channel and Channel to the Canadian Locks. In fact, all New Charts and Sailing Directions are kept on hand and will be mailed to any address, by the

MARINE REVIEW,

516 PERRY-PAYNE BLDG.

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For
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Steamers
Romeo
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These beautiful twin Steamers are in perfect condition, each a perfect model of the other, with Cabins, Single Deck, Twin Screws, two sets Engines, fully equipped and allowed to carry 150 passengers each.

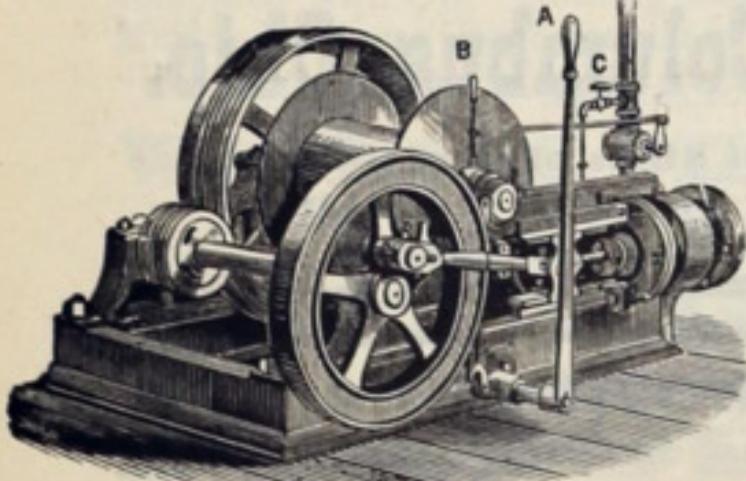
Length 80 ft. Beam 19 ft. Draft 3 ft. 8 in. (light). Built in 1891 for lake and river navigation. Original cost \$19,000—will be sold cheap (no trade). A good thing with business for the right man. Call on or address

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TWO NEW CHARTS OF THE ST. MARY'S RIVER, FROM ENTRANCE TO MUD LAKE TO POINT IROQUOIS, INCLUDING HAY LAKE CHANNEL, RECENTLY ISSUED BY THE WAR DEPARTMENT, MAY BE HAD FROM THE MARINE REVIEW AT 35 CENTS EACH.



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CHEAP RATES.

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FOR SALE, EXCURSION STEAMER COLUMBIA.

By reason of the dissolution of the firm of Murphy, Conlan & Company, of Buffalo, N. Y., this boat will be sold by the undersigned at public sale, at her mooring in Erie Basin, Buffalo, N. Y., on the 15th day of April, 1896, at 2 o'clock in the afternoon.

She is 140 feet over all, 31 feet beam and 10 feet depth of hold; tonnage of 299; licensed capacity for 1,000 passengers, and a speed of 16 miles an hour. Equipped with one 650 H.P. fore-and-aft compound engine, 18x36, with 27 inch stroke; 9x16 foot marine boiler. Full electric lighting plant, with 256 H.P. engine, 259 light dynamo, together with 4 metallic life-boats, 2 metallic life-rafts, 1,000 life-preservers, bar, soda fountain, etc., and all equipage, furnishings, and tackle. Built spring of 1892, and in excellent condition. For terms of sale and further information, address,

JOSEPH G. DUDLEY, Owner's Agent, 35 Dun Bldg., Buffalo, N. Y.

OFFICE of the Engineer 7th and 8th Light House District, New Orleans, La., March 19, 1896. Sealed proposals will be received at this office until 12 o'clock M., April 20, 1896, for furnishing and putting in place new boiler, and repair work on Light House Tender Arbutus. Specifications, form of proposal, and other information to be obtained on application to this office. The right is reserved to reject any or all bids, and to waive any defects. James B. Quinn, Major, Corps of Engineers, Engineer 7th and 8th Districts. Apr 2

FOR SALE at a Bargain.

The tug Henry—Cylinders, 16½x18; new steel boiler; steel boiler house; hull in first-class condition. This is a most favorable opportunity to procure a first-class tug for dredging outfit. For particulars apply to

WILLIAM TRUBY,
Fairport Harbor, O., where tug can be seen

Wanted TO PURCHASE, Second-Hand
10 H. P. Hoisting Engine.

Address with description, price, etc.,

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WANTED \$10,000 to \$15,000 in a partly developed Lime Stone Quarry, situated in Wisconsin, 110 miles north of Chicago, on the West Shore of Lake Michigan, with 148

Acres of Stone Land, including one mile of Lake Front with an abundance of the best Lake Sand. Stone can be utilized as Flux, Crushed, Rip-Rap and Building Stone; makes a first-class lime. Special attention is called to the transportation by water, which places this quarry in a position to beat all competitors for business in all lake towns.

Plant might be leased.

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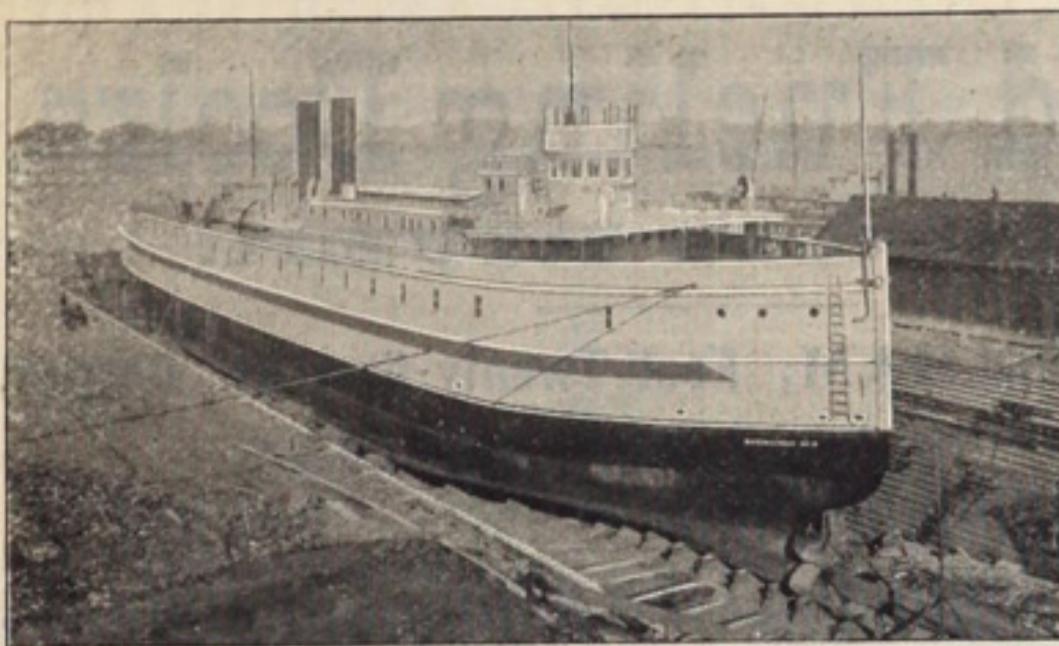
THE NORTHWESTERN STONE CO.
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Shenango No. 2, 300 feet long, 54 feet beam.

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Have built 800 BOILERS TO DATE for...

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Works, Red Bank, N. J.



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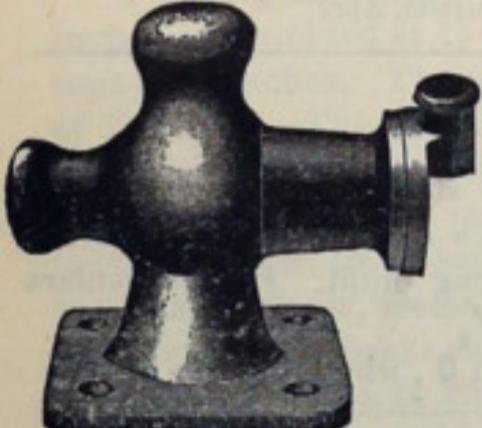
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Takes the place of wooden or iron bitts and forms a Combination Bitt and Winch. Takes up less room than the ordinary bitt. Can be used to great advantage as a Windlass or Sheet Holder on Yachts. An examination will convince you of the many uses to which it can be put.

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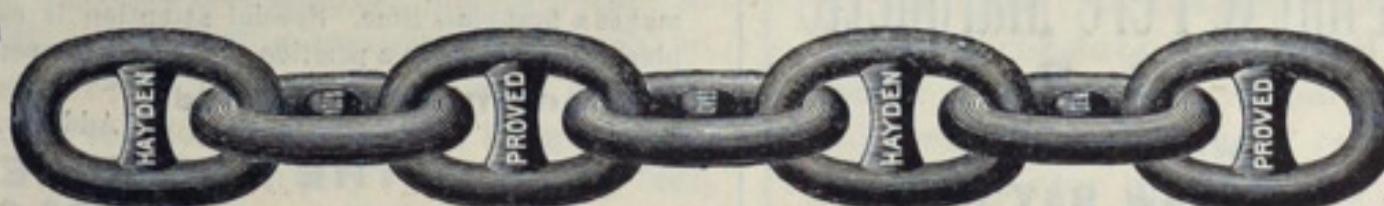
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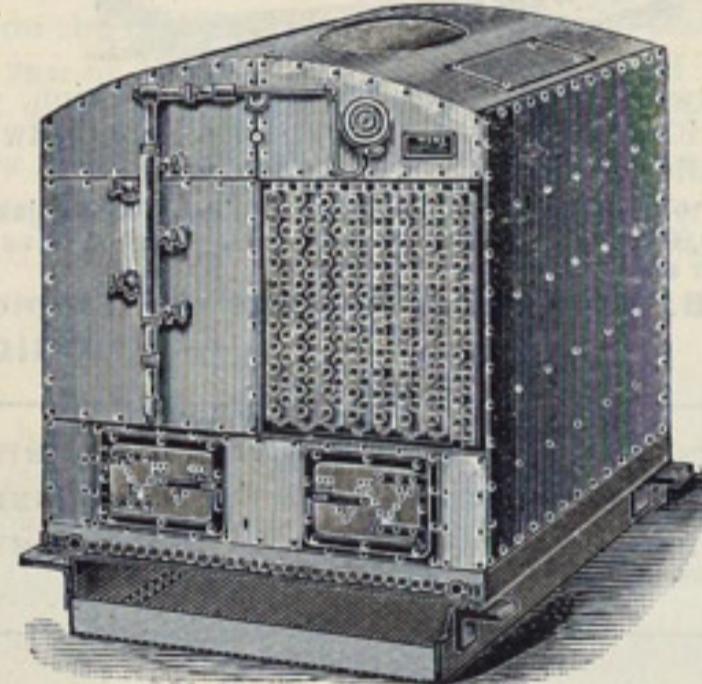
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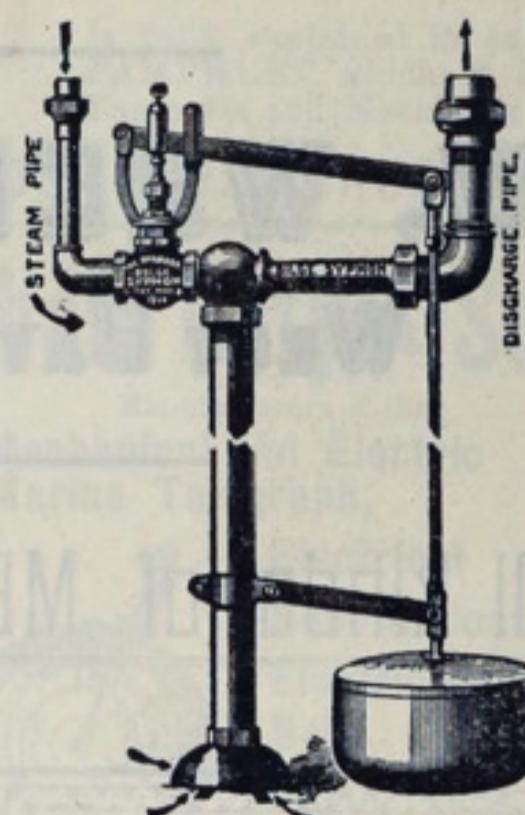
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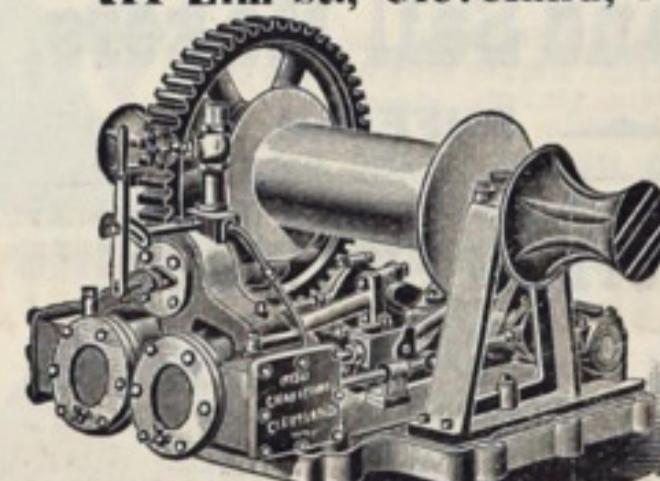
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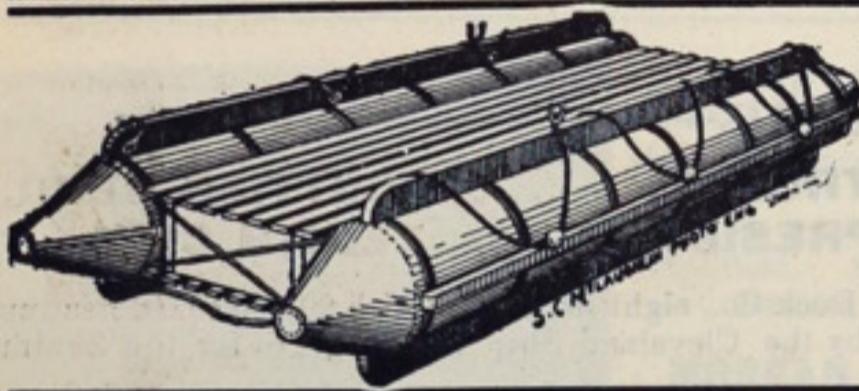
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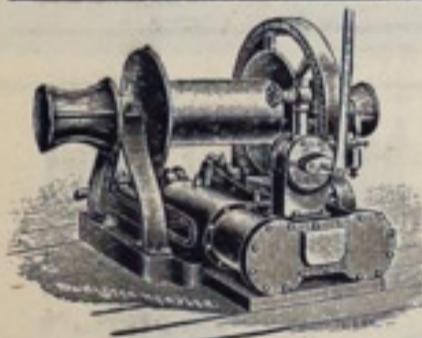
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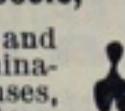
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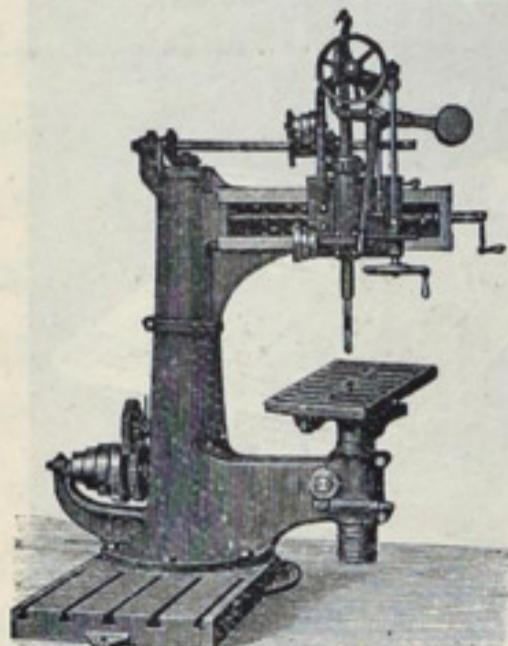
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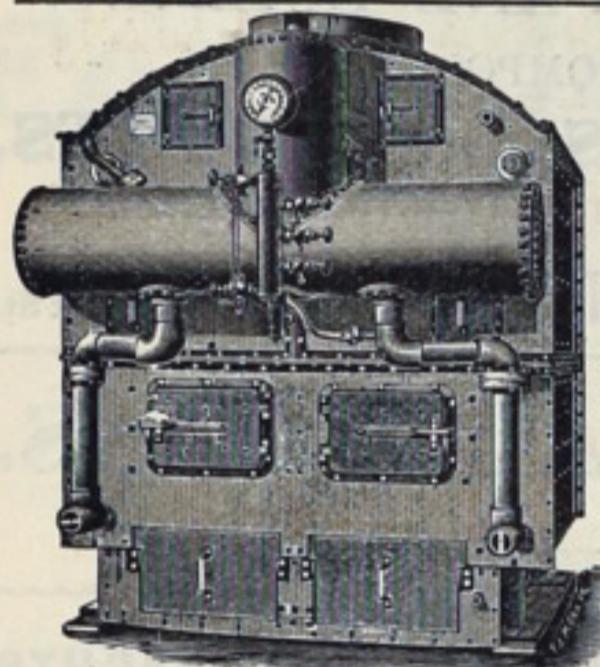
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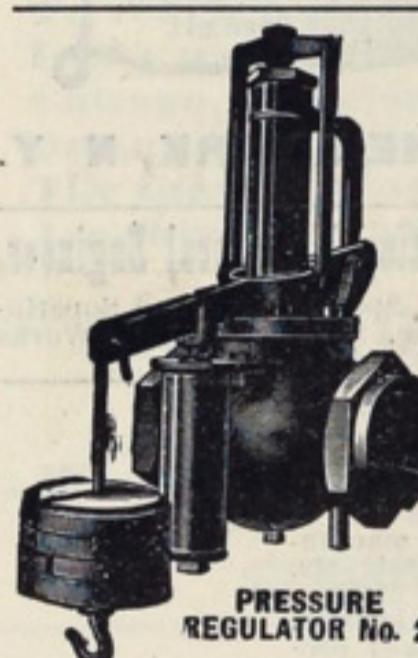
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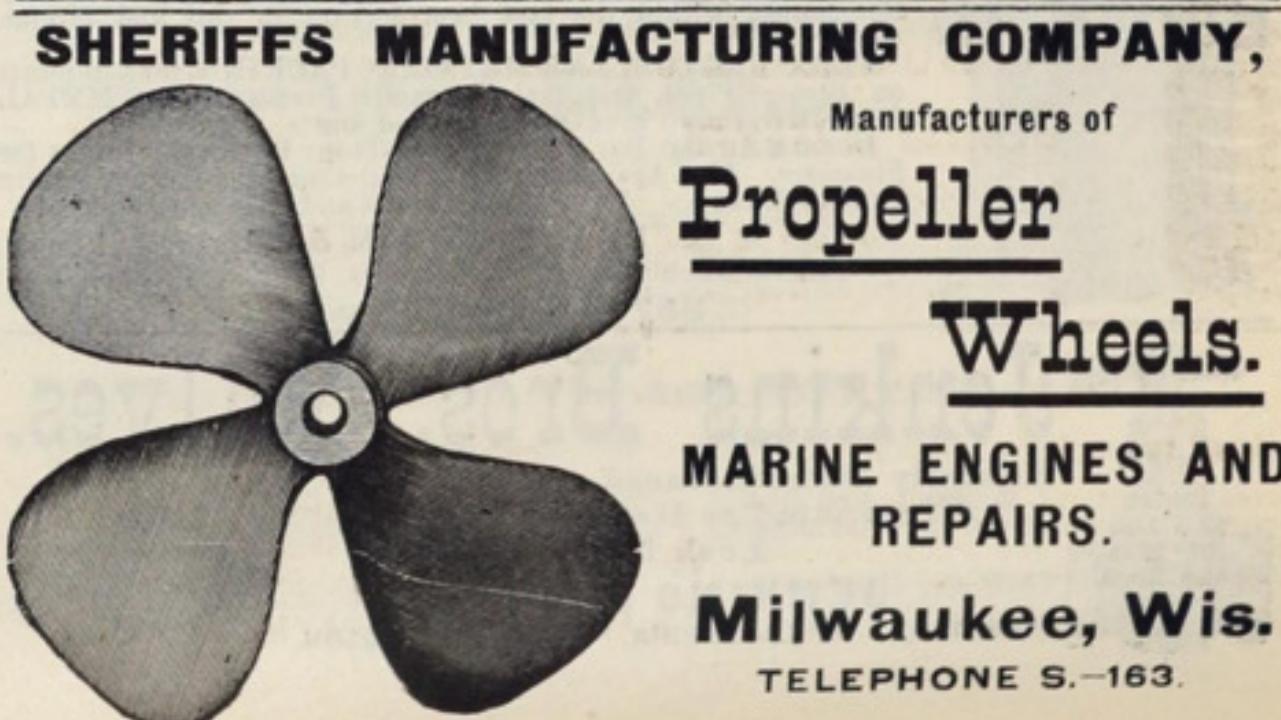
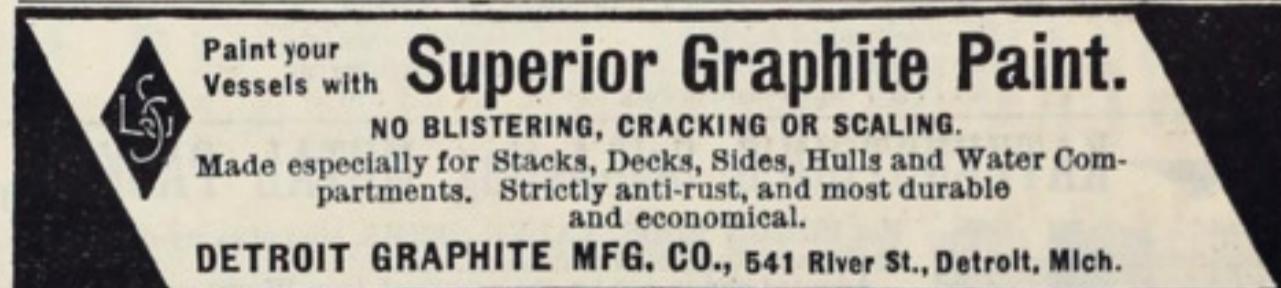
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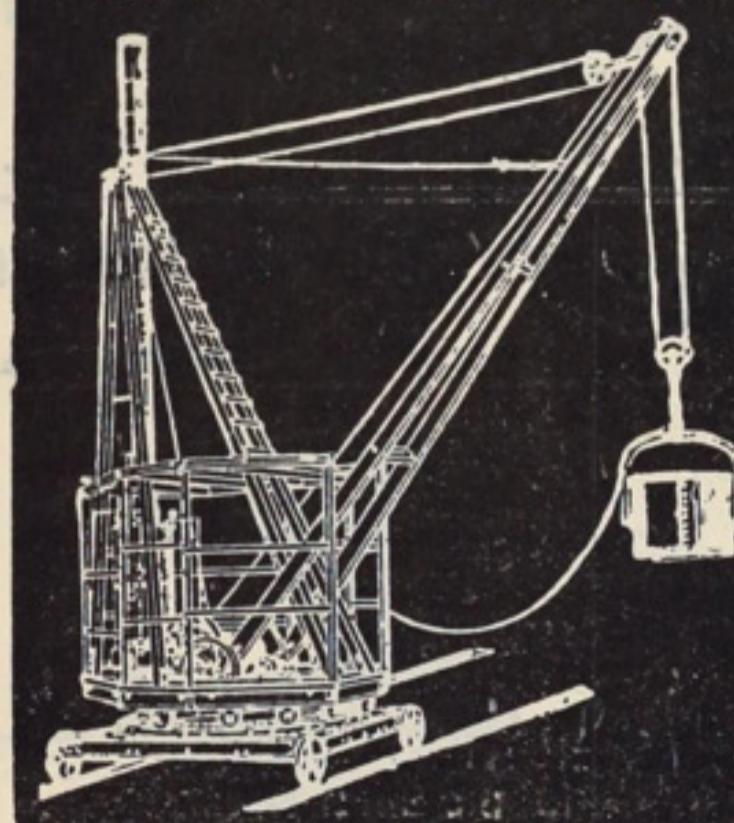
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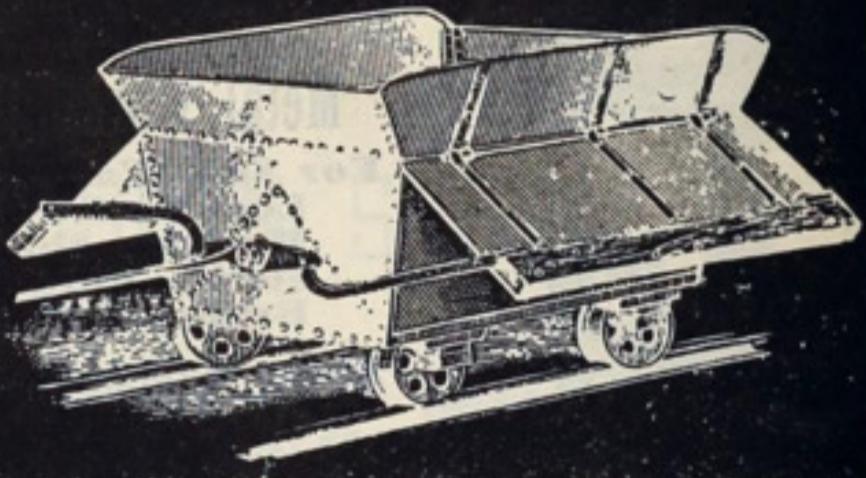


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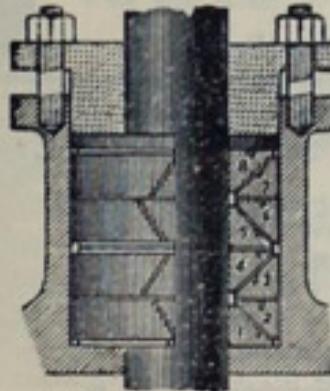
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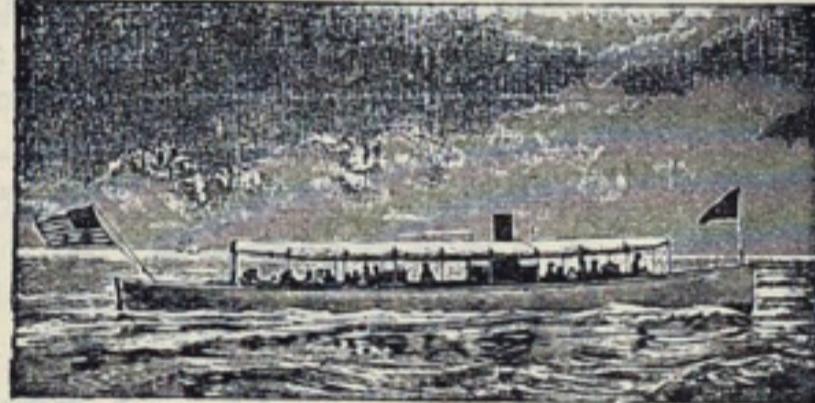
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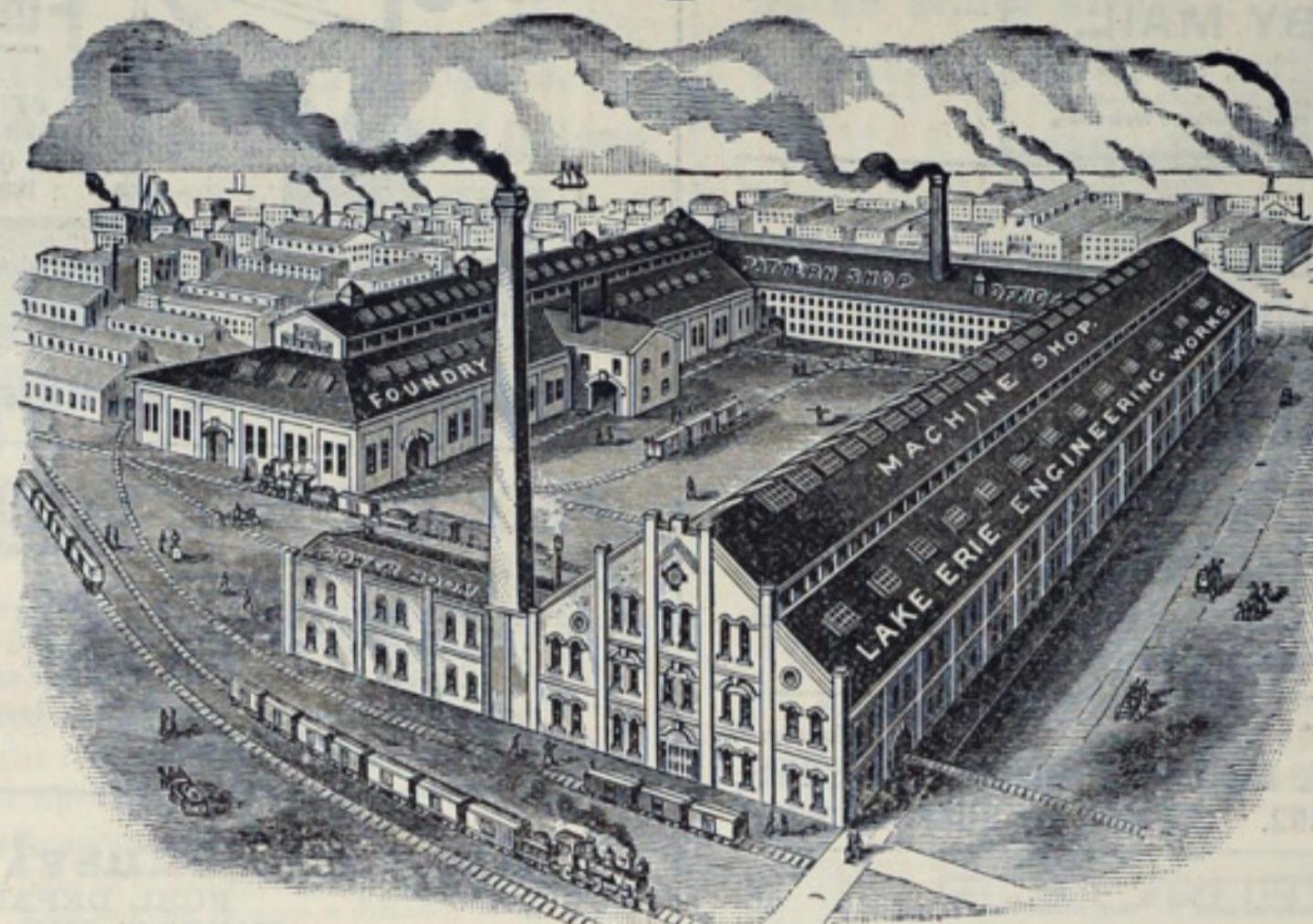
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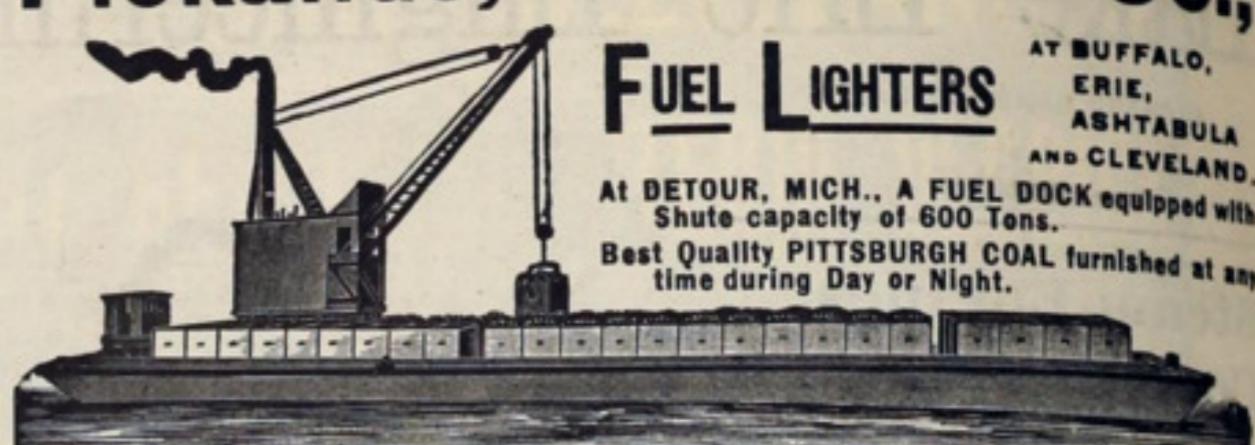
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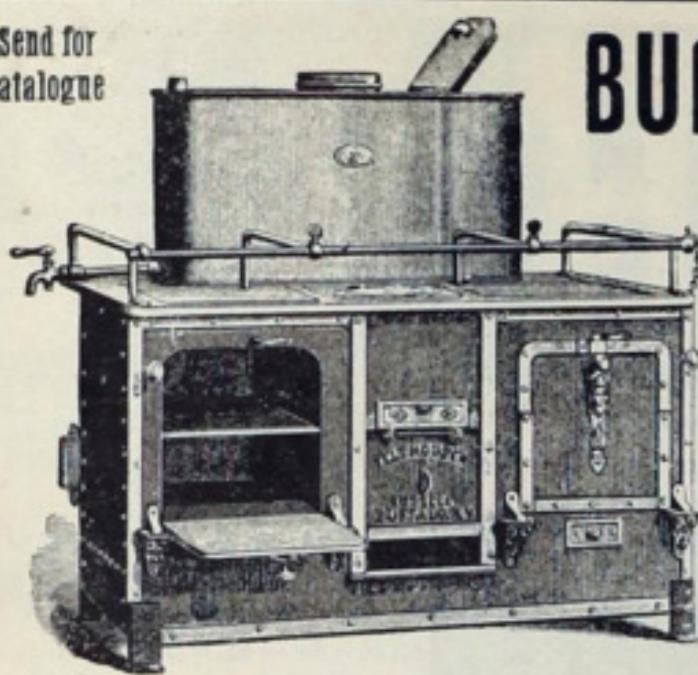
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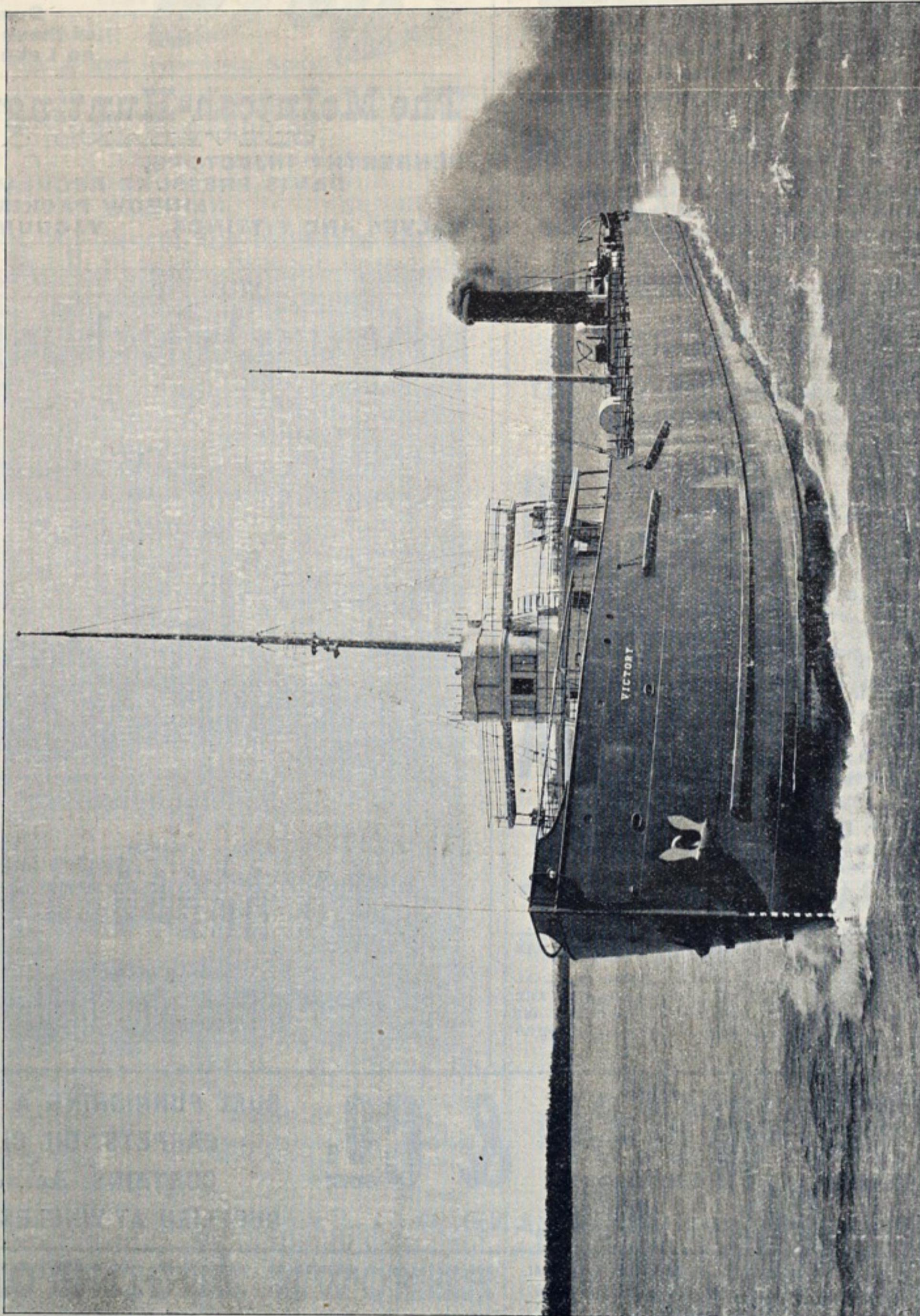
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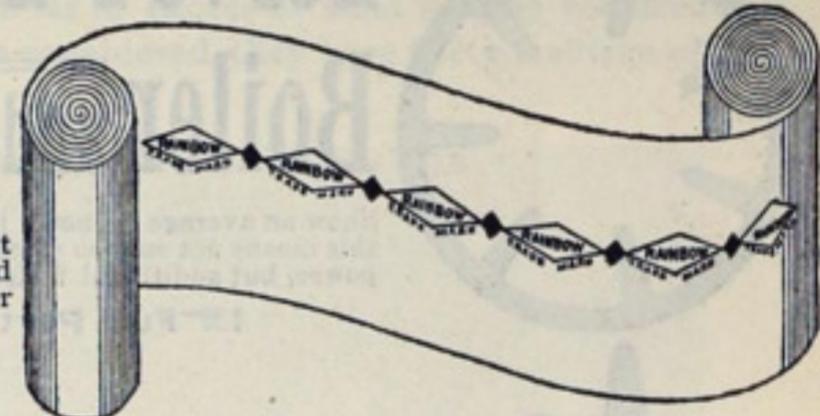
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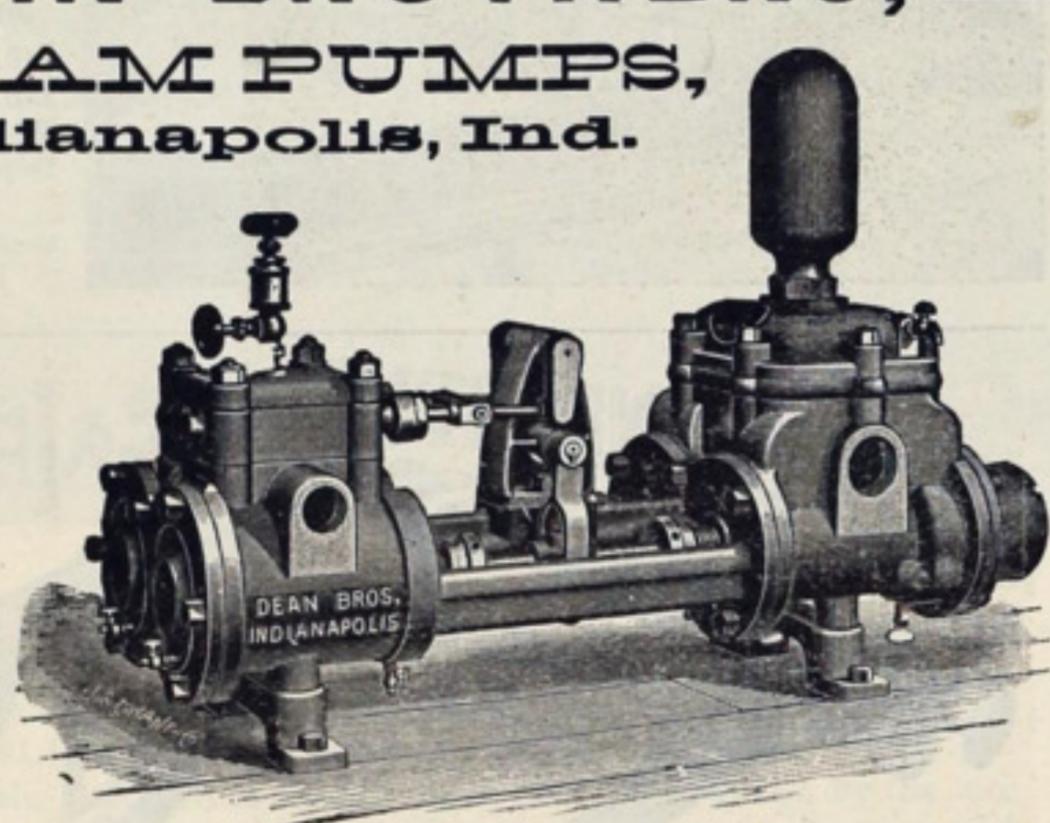
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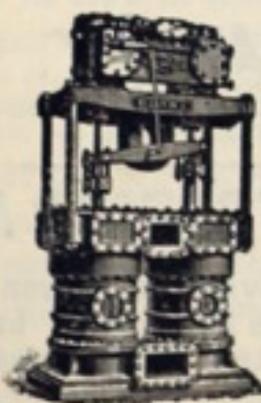
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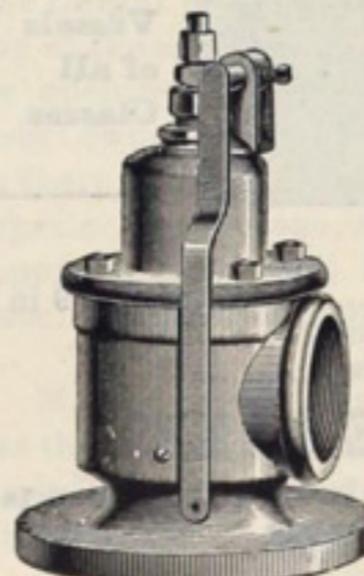
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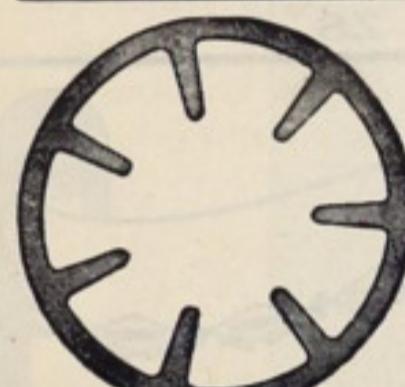
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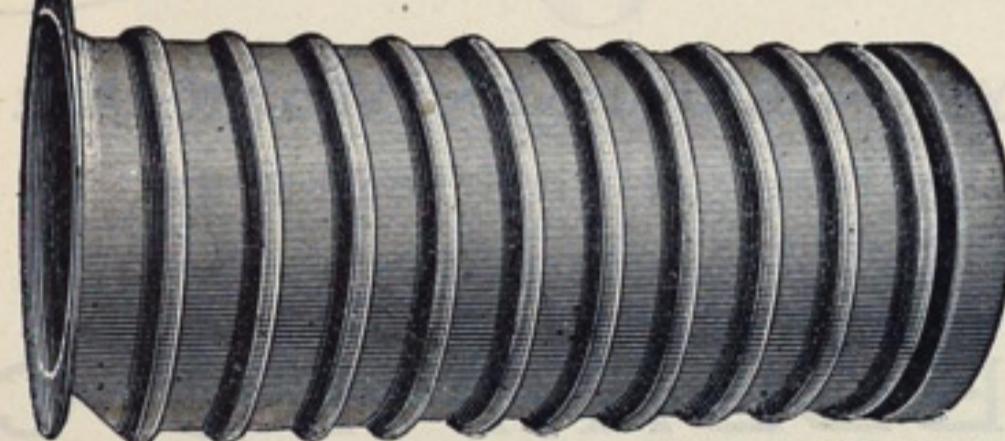
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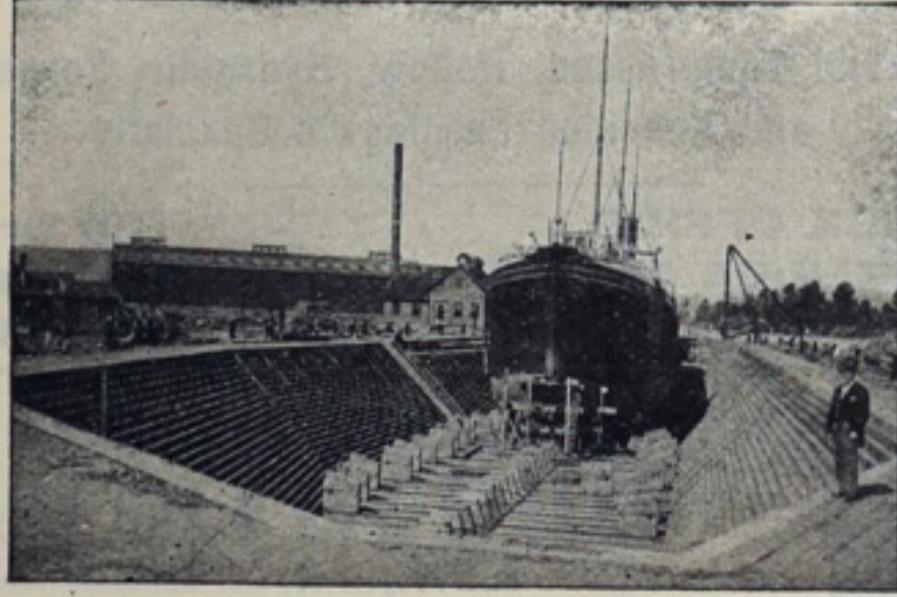
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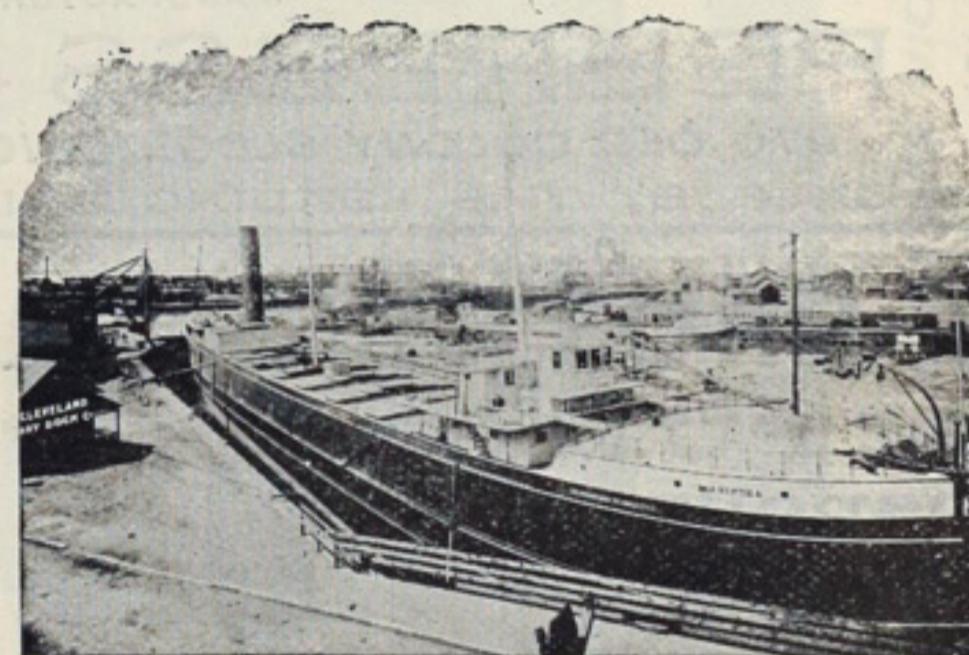
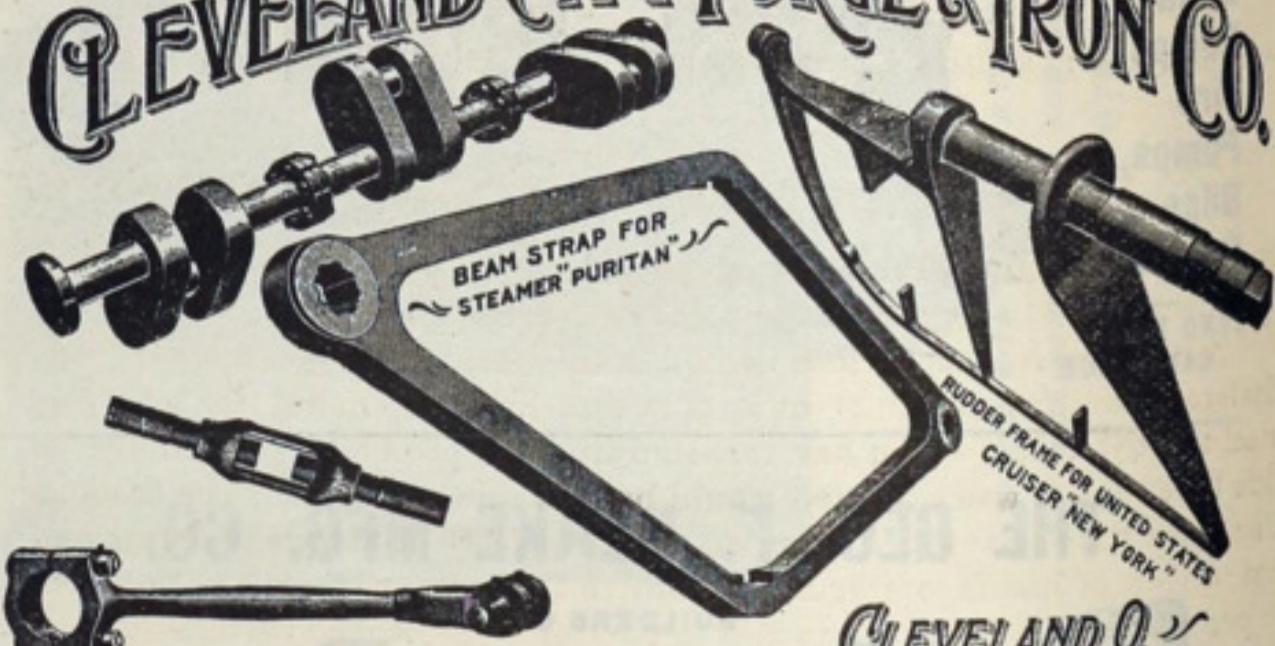
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